NEC

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EM Card User's Guide

SIGMABLADE Monitor Operation Guide
OSD (On Screen Display) Operation Guide

3rd Edition
8-2007

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BSMI Statement

警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

MIC Statement

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1. EM Card (EXP462A)
2. NEC Corporation
3. 2006.11
4. NEC Computertechno, Ltd. / JAPAN

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(5) NEC assumes no liability arising from the use of this product, nor any liability for incidental or consequential damages arising from the use of this manual regardless of Item (4).

(6) Perchlorate Material - special handling may apply.
See www.dtsc.ca.gov/hazardouswaste/perchlorate.
This only applies to California, USA.

Read this User's Guide and the User's Guide of the server before using the product.
Keep this User's Guide handy for quick reference when necessary.
Be sure to read this section carefully.

⚠ NOTES ON USE - Always read the Notes -

The following includes information necessary for proper and safe operation of the product.

SAFETY INDICATIONS

Follow the instructions in this manual for your safety when using the product.

In the User's Guide, "WARNING" or "CAUTION" is used to indicate a degree of danger. These terms are defined as follows:

⚠ WARNING	Indicates the presence of a hazard that may result in death or serious personal injury if the instruction is ignored.
⚠ CAUTION	Indicates the presence of a hazard that may cause minor personal injury, including burns, or property damage if the instruction is ignored.

Precautions and notices against hazards are presented with one of the following three symbols. The individual symbols are defined as follows:

	This symbol indicates the presence of a hazard if the instruction is ignored. An image in the symbol illustrates the hazard type. (Attention)
	This symbol indicates prohibited actions. An image in the symbol illustrates a particular prohibited action. (Prohibited Action)
	This symbol indicates mandatory actions. An image in the symbol illustrates a mandatory action to avoid a particular hazard. (Mandatory Action)

(Example)

Symbol to draw attention — Description of a danger — Term indicating a degree of danger

⚠ CAUTION
Do not disassemble, repair, or alter the server. Never attempt to disassemble, repair, or alter the server on any occasion other than described in this User's Guide. Failure to follow this instruction may cause an electric shock or fire as well as malfunctions of the server.

Symbols used in this User's Guide and warning labels are listed below.

請於使用本產品前，閱讀本使用指南及伺服器的使用指南
請就近保存本使用指南，以便任何需要之時可快速參閱
請仔細閱讀本章節

⚠ 使用注意事項 – 請經常閱讀此注意事項 -

以下包含正常及安全操作本產品的必要訊息。

安全指示

為了安全地使用本產品，請遵照本指南內的說明。

在使用指南中，使用“ 警告” 或“ 注意” 來表示危險的程度，項目定義如下：

⚠ WARNING	表示如不遵守該指示，所存在的危險可能導致死亡或嚴重個人傷害。
⚠ CAUTION	表示如不遵守該指示，所存在的危險可能導致次要的個人傷害，包含燒傷或財產損失。

危險的預防措施及注意事項為下列三種符號之一，個別符號的定義如下：

	此符號表示如不遵守該指示可能存在的危險。符號中的圖案為危險內容。（注意）
	此符號表示禁止行為。符號中的圖案為禁止行為內容。（禁止行為）
	此符號表示強制行為。符號中的圖案為強制行為內容，以避免特殊的危險。（強制行為）

(範例)

引起注意的符號　　危險描述　　表示危險程度名稱

⚠ CAUTION
請勿自行拆卸、修理或改造本伺服器。 除本書記載的情況外，請勿嘗試自行拆卸、修理或改造本伺服器。否則可能引起觸電或火災，以及導致伺服器無法正常動作。

本使用指南所使用的符號及警告標籤如下所列。

Attentions

	Indicates that improper use may cause an electric shock.
	Indicates that improper use may cause personal injury.
	Indicates that improper use may cause fingers to be caught.
	Indicates that improper use may cause smoke or a fire.
	Indicates a general notice or warning that cannot be specifically identified.

Prohibited Actions

	Indicates a general prohibited action that cannot be specifically identified.
	Do not disassemble, repair, or modify the server. Otherwise, an electric shock or fire may be caused.

Mandatory Action

	Unplug the power cord of the server. Otherwise, an electric shock or fire may be caused.
	Indicates a mandatory action that cannot be specifically identified. Make sure to follow the instruction.

注意

	表示不當使用可能引起觸電。
	表示不當使用可能造成人體傷害。
	表示不當使用可能造成手指被夾住。
	表示不當使用可能引起冒煙或火災。
	表示非特定的一般性提醒或警告。

禁止行為

	表示非特定的一般禁止。
	請勿對伺服器進行拆卸、修理或改造，否則有觸電和發生火災的危險。

強制行為

	請將本設備的電源插頭從伺服器上拔下，否則有觸電和發生火災的危險。
	對非特定的一般使用者的行為進行指示。請按照說明進行操作。

Safety Notes

This section provides notes on using the product safely. Read this section carefully to ensure proper and safe use of the product. For symbols, see "SAFETY INDICATIONS" provided earlier.

General

⚠ WARNING

Do not use the server for services where critical high availability may directly affect human lives.

The server is not intended to be used with or control facilities or devices concerning human lives, including medical devices, nuclear facilities and devices, aeronautics and space devices, transportation facilities and devices; and facilities and devices requiring high reliability. NEC assumes no liability for any accident resulting in personal injury, death, or property damage if the server has been used in the above conditions.

⚠ CAUTION

Keep water or foreign matter away from the server.

Do not let any form of liquid (e.g., water) or foreign matter (e.g., pins or paper clips) enter the server. Failure to follow this warning may cause an electric shock, fire, or failure of the server. When such things accidentally enter the server, immediately turn off the power and disconnect the power plug from the outlet. Do not disassemble the server. Contact your service representative.

安全注意事項

本章節提供在安全使用上的注意事項。請仔細閱讀本章節，以確保正常及安全地使用本產品。關於符號，請參閱前面的“ 安全指示” 。

一般注意事項

⚠ WARNING

請勿使用本伺服器於需要高度可靠性及可能直接危及人命的操作上。

本產品請勿安裝於醫療設備、原子能設備、航空宇宙機器、運輸設備等會危及人命以及需要高度可靠性的設備和機器上，也請勿使用本產品來控制這些機器。如果將本產品用於這類系統的設備及機器，所造成的人身事故及財產損失等後果，本公司概不負責。

⚠ CAUTION

請保持設備內不要進水和異物。

設備內請勿進入水、針、夾子等異物，否則可能引起火災和觸電。一旦有異物進入，請立即關閉電源，將電源插頭從插座上拔下。請勿自行拆卸，並與經銷商或維護服務公司聯繫。

Installation, Relocation, Storage, and Connection

⚠ CAUTION

Do not install the server in a place other than specified.

Do not install the server in the following places or any place other than specified in this manual. Failure to follow this instruction may cause a fire.

- a dusty place
- a humid place such as near a boiler
- a place exposed to direct sunlight
- an unstable place

Do not use the server in a place where corrosive gases exist.

Make sure not to locate or use the server in a place where corrosive gases (sulfur dioxide, hydrogen sulfide, nitrogen dioxide, chlorine, ammonia, ozone, etc) exist.
Also, do not locate it in an environment where the air (or dust) includes components accelerating corrosion (e.g., sulfur, sodium chloride) or conductive metals. There is a risk of a fire due to corrosion and shorts of the internal printed circuit board.

Do not use an unauthorized interface cable.

Use only interface cables provided by NEC and locate a proper device and connector before connecting a cable. Using an unauthorized cable or connecting a cable to an improper destination may cause a short circuit, resulting in a fire.
Also, observe the following notes on using and connecting an interface cable:

- Do not use a damaged cable connector.
- Do not use a damaged cable.
- Do not step on the cable.
- Do not place any object on the cable.
- Do not use the server with loose cable connections.

Do not pinch your fingers in mechanical components.

Exercise caution so that your fingers are not caught between a door and another mechanical part or cut during installation or removal of the product in/from the server.

安裝，移動，保管及連接注意事項

⚠ CAUTION

請勿安裝或存放在未指定的場所。

請勿將本設備放置在如下場所，以及本書未指定的場所，否則可能引起火災。

- 灰塵較多的場所
- 熱水器旁等濕氣較高的場所
- 陽光直射的場所
- 不平穩的場所

請勿在有腐蝕性氣體的場所使用本設備。

請勿在有腐蝕性氣體（如二氧化硫、氫化硫、氮、氫、氨或臭氧等）存在的場所使用或存放本產品。

還有，請勿將本產品安裝在灰塵較多或含有腐蝕性物質(如氯化鈉或硫磺)或含有過量金屬碎末或傳導粒子等的地方。因為內部機板腐蝕或短路，可能引起火災的危險。

請勿使用未指定的信號線。

請使用NEC指定的信號線，並在確認連接設備和介面後進行連接。使用未指定信號線或連接錯誤等會造成短路、導致火災。

信號線的操作和連接，須遵守以下注意事項：

- 請勿使用任何損壞的信號線接頭。
- 請勿使用任何損壞的信號線。
- 請勿踩踏信號線。
- 請勿在信號線上載入物品。
- 信號線接鬆動時請勿使用。

請勿讓機械零件夾住您的手指。

請充分了解注意，您的手指並不會在介於門與其他機械部份間被夾住，或從伺服器安裝或移動產品時被切斷。

Cleaning

⚠ WARNING

Do not disassemble, repair, or alter the server.

Never attempt to disassemble, repair, or alter the server on any occasion other than described in this manual. Failure to follow this instruction may cause an electric shock or fire as well as malfunctions of the server.

⚠ CAUTION

Make sure to complete device installation.

Always connect power cords and interface cables firmly. An incompletely installed device may cause a contact failure, resulting in smoke or a fire.

清潔注意事項

⚠ WARNING

請勿自行拆卸、修理或改造本伺服器。

除本書記載的情況外，請勿嘗試自行拆卸、修理或改造本伺服器。否則可能引起觸電或火災，以及導致伺服器無法正常動作。

⚠ CAUTION

確認安裝完畢。

電源線及信號線要穩固地連接妥當。不確實的安裝可能引起接觸不良，造成冒煙或火災。

Preface

Thank you for purchasing the EM card. Installing the EM card in the EM card slot on the Blade Enclosure (SIGMABLADE-M) provides the following management features. See [Basic Features] - [Management Features] described later.

- Power management
- Cooling fan management
- Chassis management in rack: Manages the names of rack, Blade Enclosure, and information of modules in the Blade Enclosure
- System monitoring: Monitors statuses of power supply unit, fan, and modules in Blade Enclosure
- External interfaces

In the Package

The carton contains various accessories as listed below. Make sure that you have everything. If you find any component is missing, contact your service representative.

- EM card ×1
- CD-ROM containing document ×1
- Precautions on Use ×1
- Warranty ×1

> **NOTE:** This warranty is available only for use in Japan.
> Do not use it in any other country other than Japan.

Text Conventions

The following conventions are used throughout this User's Guide. For safety symbols, see "SAFETY INDICATIONS" provided earlier.

IMPORTANT:	Items that are mandatory or require attention when using the server
NOTE:	Helpful and convenient piece of information

For Proper Operation

Observe the following notes for successful operation of the product. Use of the product ignoring the notes will cause malfunctions or failures of the server.

- Clean the product on a regular basis. Regular cleaning proactively prevents various failures of the server.

Transfer to Third Party

When you transfer (or sell) the product, make sure to provide this manual along with the product to a third party.

Disposal

Dispose of the EM card according to all national laws and regulations.

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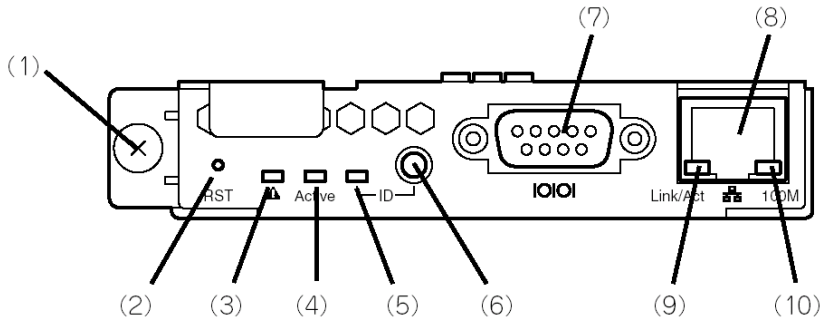
Chapter 1

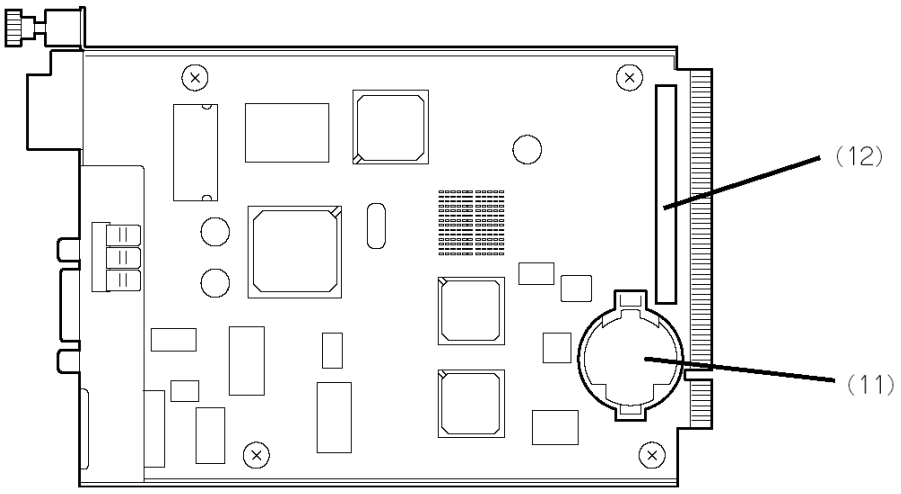
Names and Functions of Components

Names and functions of the components are shown below:

EM Card



Front View



Internal View

(1) Fixing screw
Used to secure the EM card to the Blade Enclosure.

(2) RESET switch
Used to reset the EM card.

(3) STATUS LED (green/amber)
Indicates the status of the EM card. See "LED Indication" for details.

(4) ACTIVE LED (green)
This LED is lit when the EM card is specified as the active EM.

(5) ID LED (blue)
Used to identify the device. For details, see "LED Indication" described later.

(6) ID switch
Used to turn on or off the ID LED. When pressed, the management PC is notified that the target EM card is identified.

(7) Serial port
Used as a management port. Management of the EM card is available while the EM card is active. This port is available only while the door of the SIGMABLADE monitor is open, and is mainly used to temporarily connect a terminal device.

(8) Management LAN interface
Used as a management LAN port. Do not use this LAN port for any other use. Use the EM1/EM2 port at the rear of the Blade Enclosure instead.

(9) LINK/ACT LED (green)
Indicates the LAN access status. For details, see "LED Indication" described later.

(10) SPEED LED (amber)
Indicates the transfer rate of the LAN port. For details, see "LED Indication" described later.

(11) Lithium battery

(12) MAC (Media Access Control) address label
Shows the network-specific MAC address used by the EM card.
Note this address when installing or removing the EM card.

LED Indication

Shown below are LED indications and their explanations.

STATUS LED

The table below shows the indications of the STATUS LED and the recommended actions:

When a single EM card is installed (in EM card slot EM1 or EM2)

STATUS LED condition	Meaning	Action
Continuous green	The EM card is working normally.	–
Flashing in amber	Reset process is in progress.	Wait for a moment. When the reset process completes, the LED turns green.
	An error occurred in the EM card.	Replace the EM card according to the installation/removal procedure described later.

When two EM cards are installed (in EM card slots EM1 and EM2)

STATUS LED condition		Meaning	Action
EM card in slot EM1	EM card in slot EM2		
Continuous green	Flashing in green	The EM card in slot EM1 is operating as an active card. The EM card in slot EM2 is operating as a standby card.	Wait for a moment. When the reset process completes, the LED turns green.
Flashing in green	Continuous green	The EM card in slot EM1 is operating as a standby card. The EM card in slot EM2 is operating as an active card.	
Flashing in amber	Flashing in amber	Reset process is in progress.	Wait for a moment. When the reset process completes, the LED turns green.
Flashing in amber	Continuous green	An error occurred on the EM card in slot EM1.	Replace the failed EM card according to the installation/removal procedure described later.
Continuous green	Flashing in amber	An error occurred on the EM card in slot EM2.	

ACTIVE LED

This LED turns green when the EM card is specified as an "Active" card. If the EM card is specified as a "Standby" card, this LED does not turn on.

ID LED

The ID LED of the EM card which is activated by the ID switch or a software command turns blue.

LINK/ACT LED

This LED turns green when the LAN port is connected to the network. It flashes green while performing data transmission.

SPEED LED

The LAN port supports 100BASE-TX and 10BASE-T interface. This LED turns amber when the network port is linking at 100Mbps and goes off when linking at 10Mbps.

> **NOTE:** For the names and LED indications of the SIGMABLADE monitor, see Chapter 5.

Basic Features

This section describes the basic features of the EM card.

Management Feature

The management features of the EM card are as follows:

Power Management

The EM card manages DC output of power unit(s) in the Blade Enclosure. When AC power is supplied to the Blade Enclosure, the EM card starts operating. If two or more power units are installed in the Blade Enclosure and they are working normally, the EM card turns on the DC output of two of them.

> **NOTE:** For the third and subsequent power units, DC output is turned on/off as needed.

The EM card manages the power consumption of the entire system.

The maximum power consumption of the entire system varies depending on the power capacity supplied to the system and the configuration of power units (including the number and type of units).

The EM card manages the power consumption of each of the modules of the system so that its maximum power consumption is maintained within a certain value (referred to as "ceiling control").

One of the following three upper limit values is used for ceiling control:

(A) Upper limit determined by the type and number of power supply units and the input voltage.

(B) If a UPS is managed by the EM card, the EM card calculates the upper limit based on the type of UPS connected.

(C) Upper limit specified for input voltage regardless of the configuration of power units or use of UPS Manager. See "Configuration File" in Chapter 3 and "Configuration" in Chapter 4 for details.

The EM card uses the lowest value among (A), (B), and (C) as the upper limit value and performs ceiling control of system power consumption.

You can select a power redundancy mode (N+N redundant or N+1 redundant) and a power control policy (CPU performance, "maintain redundancy," or "recover redundancy") for the power management policies of the EM card.

- There are two power redundancy modes, N+N redundant and N+1 redundant.
  - In the N+N redundant mode, each power unit is divided into two groups to configure the redundant power supply system. If a power supply in a group fails, the power of the other group can maintain system operation.
  - In the N+1 redundant mode, power units are not grouped but each power unit is controlled individually. Using a power supply in addition to the number of power units required for normal system operation enables power system redundancy.
- The power control policy includes three modes, CPU performance, "maintain redundancy," and "recover redundancy."
  - The CPU performance mode makes the EM card prioritize performance of CPU blades. In this mode, if the EM card cannot accept a new power request from a CPU blade while maintaining power redundancy, the EM card releases the power redundant configuration and permits the new power request from the CPU blade. (If a power unit fails during operation under the release of the power redundant configuration, then the system may be forcibly shut down.)
  - The "maintain redundancy" mode makes the EM card accept a new power request from a CPU bladeonly if the power redundancy can be maintained. If the EM card cannot accept a new power request from a CPU blade while maintaining power redundancy, the EM card denies the request. In the "maintain redundancy" mode, no emergency measures are taken if the power redundancy is lost due to a failure of a power unit. (When a power unit fails with no power redundancy status, the system may be forcibly shut down.)
  - The "recover redundancy" mode makes the EM card accept a new power request from a CPU blade while maintaining power redundancy by limiting the performance of CPU blades to reduce the power consumption in the event of a power unit failure. (Depending on the operation of CPU blades, the EM card may not be able to reduce the power consumption to allow the power redundancy to be recovered.)

When a switch module inserted into a switch module slot issues a power-on request, the EM card checks the power consumption of the switch module and turns it on if it is within the maximum power consumption management described above.

When a CPU blade inserted into a CPU blade slot requests power, the EM card permits it if the power consumption is possible within the maximum power consumption management described above.

> **NOTE:** When a CPU blade issues a power-on request to the EM card, the request is denied if the EM card determines there is insufficient power due to an event such as a power shortage.

UPS Management

The EM card monitors the status of UPS supplying power to the Blade Enclosure. In addition, the EM card shuts down CPU blades if AC power to the UPS is interrupted.

NOTES:

- Check that the UPS has enough capacity to supply the power required for the entire system. The EM card calculates the maximum capacity of power supplied by the UPS to reflect the value in the maximum power consumption management described above. If the UPS has a low power supply capacity, some CPU blades may not be turned on.
- When using Windows 2003 Server, "Logging on to the system is not required to shut down the system" should be enabled in the Security Policy tab.
- The EM card automatically detects the following UPS's:
  For 200 VAC:
  5000VA UPS [N8142-24A] and 8000VA-UPS [N8142-25]
  For 100 VAC:
  3000VA-UPS [N8142-11B] and 1500VA-UPS [N8142-23A]
- As described above, in the event that power to the UPS is interrupted, CPU blades may be shut down automatically. However, after power to the UPS is restored, the CPU blades will not start automatically. You need to power on the CPU blades manually.

Cooling Fan Management

When the CPU blade is powered on, the necessary amount of cooling air changes according to the temperature. The EM card determines the optimal rotation speed of the fan according to the number of installed fan units.

NOTE: Depending on the number of installed fan units and CPU blades and their installation locations, when the EM card determines that the cooling capacity is insufficient, it may not permit a CPU blade to power-on. In this case, check that the fan units and CPU blades are properly installed.

Interface Management between CPU Blade and Switch Module

If the CPU blade is incorrectly connected to the switch module, it will be damaged. To prevent this, the EM card checks the interface connection between them. If the interface connection is not correct, the EM card suppresses the power-on of the relevant CPU blade and switch module or disables the connection port.

> **NOTE:** For more information on the connection between the CPU blade and switch module in the Blade Enclosure, refer to the User's Guide of the switch module.

Chassis Information Management

The EM card manages the names of the rack, Blade Enclosure, CPU blades, and switch modules.

Except for CPU blade names, they are specified in a configuration file.

> **NOTE:** The CPU blade name can be obtained from the CPU blade.

Blade Enclosure Inter Connect

If more than one Blade Enclosure (SIGMABLADE-M) is mounted in a single rack, connect a LAN cable (straight) to the LOWER port of the topmost Blade Enclosure and the UPPER port of the Blade Enclosure installed beneath it to allow the EM cards of the Blade Enclosures to share the rack name and its unique ID.

The EM cards can read the status information of the Blade Enclosures and display the information on the Web console.

The Rack Information screen on the Web console has a link for each connected Blade Enclosure.

When the same user name and password are set for the Web consoles, you can automatically log in to any Web console through the link to the Web console.

See Chaper 4 for details of the Web console.

IMPORTANT:

- To use the Blade Enclosure inter connect, EM card N8405-019A must be installed.
- For the Blade Enclosure inter connect, use LAN cables (straight) as short as possible. LAN cables of three meters or less are recommended.
- Do not connect a LAN cable to the UPPER port of the topmost Blade Enclosure and the LOWER port of the Blade Enclosure installed beneath it.

NOTES:

- Check that LAN cables are connected correctly. Each of the EM cards recognizes the positional relationship among the Blade Enclosures in the rack depending on the cable connections to the UPPER and LOWER ports on the Blade Enclosures. Incorrect cable connections prevent the EM cards from recognizing the positional relationship among the Blade Enclosures properly.
- Up to six Blade Enclosures can use the Blade Enclosure inter connect.

Bridge Function

The EM card bridges packets from the EM1/EM2 port at the rear of the Blade Enclosure to the internal network. It enables network communication between the management unit of the CPU blades and switch modules in the Blade Enclosure (e.g., EXPRESSSCOPE Engine) and external devices.

NOTE: When bridging, the EM card executes port filtering to prevent unnecessary packets from flowing to the network.
The port number 49623 is used exclusively by the EM card and cannot be used for any other purpose.

SNMP Agent

SNMP is a protocol used to communicate management data among network devices.

The administrator of the EM card can use SNMP to monitor the operating status of the EM card and the blade system (Blade Enclosure, fan units, or power units) which the EM card manages.

Registering community name and SNMP trap message destination are specified in a configuration file.

Duplex EM

Installing two EM cards in the EM1 and EM2 slots enables the duplexed configuration. In the duplexed configuration, one of the EM cards is an active EM, and as the other is a standby EM card. The cards are connected with an internal serial interface to transmit/receive information synchronously.

When an active EM fails or when the switchover command is executed, it is changed to a standby EM after the system is rebooted. The previous standby EM then becomes the active EM.

IMPORTANT:

- In the duplexed configuration, the firmware revision of the EM cards should be the same.
- To use the Blade Enclosure inter connect in the duplexed configuration, EM card N8405-019A must be installed. If the Blade Enclosure inter connect is not used in the duplexed configuration, both N8405-019 and N8405-019A can be used in the Blade Enclosures. The Blade Enclosure inter connect can be used without the duplexed configuration.

NOTE: When the switchover command is executed, the bridge feature is temporarily stopped, and the management LAN interface may be temporarily disconnected.

Chapter 2

Installation/Removal of EM Card

Two EM cards can be installed in the slots located at the front of the Blade Enclosure.

This section describes how to install the EM card in the Blade Enclosure and provides notes on using the EM card.

IMPORTANT:

- The EM card may be installed or removed by any user. However, NEC does not assume any liability for damage to devices or the server or malfunctions of the server resulting from installation by the user. NEC recommends you ask your service representative for assistance to install or remove the EM card.
- Make sure to use only cables authorized by NEC. Repair costs of the server due to malfunctions, failures, or damage resulting from using unauthorized cables will be charged even within the warranty period.

Safety Notes

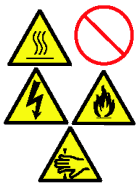
Observe the following notes to install or remove the EM card safely and properly:

⚠ WARNING

Observe the following instructions to use the server safely. Failure to follow these instructions may result in death or serious personal injury. See pages i to v for details.

- Do not disassemble, repair, or alter the server.
- Unplug the power cord before working with the server.

⚠ CAUTION



Observe the following instructions to use the server safely. Failure to follow these instructions may cause a fire, personal injury, or property damage. See pages i to v for details.

- Make sure to complete installation.
- Do not pinch your finger(s) in components.

- Keep the component in an anti-static bag until you are ready to install it in the Blade Enclosure.
- Hold the component by its edges to avoid touching any terminals or parts.
- To store or carry the component, place it in an anti-static bag.

Preparation for Installation/Removal

A Phillips screwdriver is required.

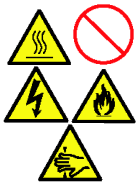
If the EM cards are not in a redundant configuration prior to replacement, the configuration data will be lost. You must reconfigure the EM card after replacement.

NOTE: It is recommended to make a backup copy of the configuration data of the EM card.
The configuration file name is as follows:
File name: /var/nvdata/rw_poem.conf
For information on the backup/restore procedure, see "Backup/Restore of Configuration File" described later.

Installation/Removal Procedure

Install or remove the EM card in the following procedure.

⚠ CAUTION

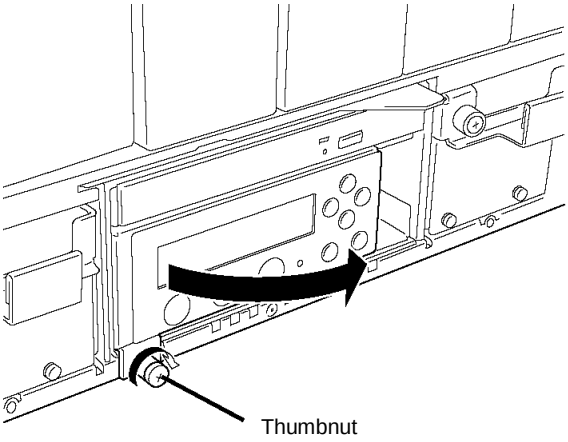


Observe the following instructions to use the server safely. Failure to follow these instructions may cause a fire, personal injury, or property damage. See pages i to v for details.

- Make sure to complete installation.
- Do not pinch your finger(s) in components.

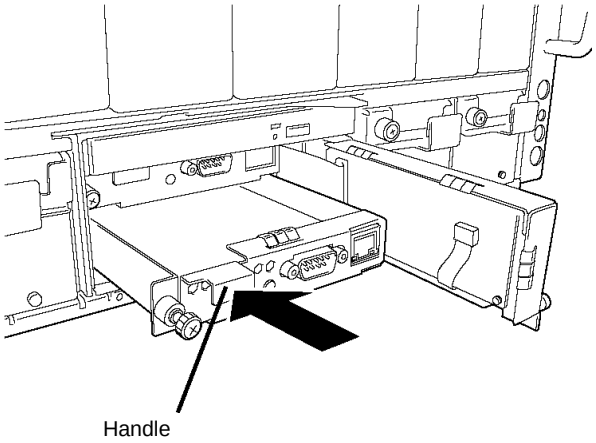
Installation

1. Prepare for installation according to "Preparation for Installation/Removal."
2. Loosen the thumbnut on the SIGMABLADE monitor and open the cover.

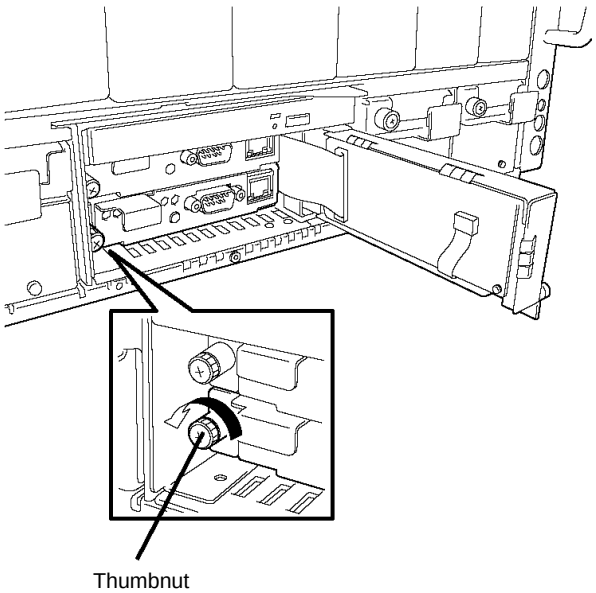


3. Locate the slot to install the EM card. Insert the EM card into the slot while pushing the handle.

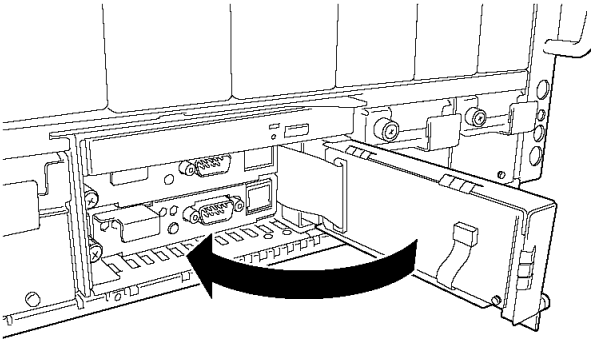
> **NOTE:** When removing the EM card, hold the handle and pull the EM card out from the slot.



4. Secure the EM card to the Blade Enclosure by tightening the thumbnut located at the left end of the card.



5. Close the cover of the SIGMABLADE monitor and secure it with the thumbnut.



Removal

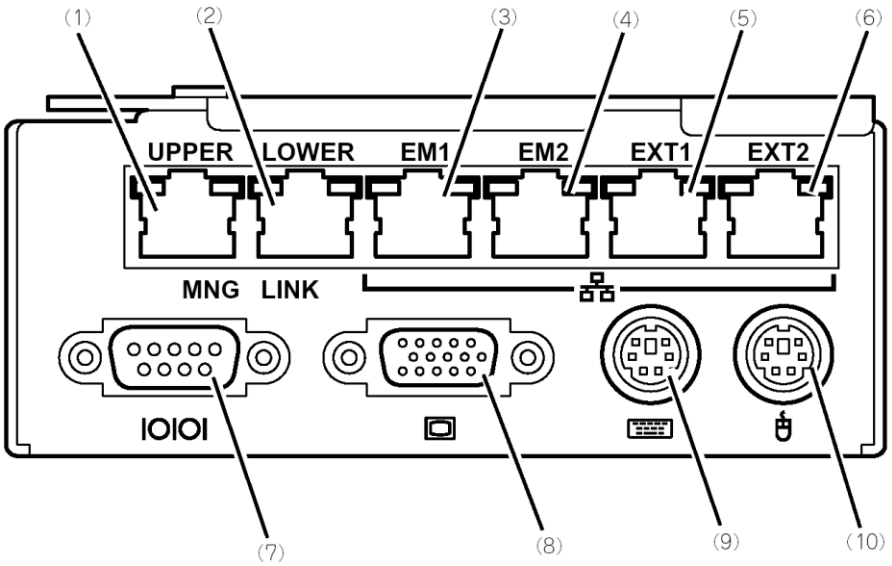
The removal procedure is the reverse of the installation procedure.

NOTE: It is recommended to make a backup copy of the configuration data of the EM card.
For information on the backup/restore procedure, see "Backup/Restore of Configuration File" described later.

IMPORTANT: As long as
– no EM card is installed, or
– the ACTIVE LED of the EM card(s) is not lit after the EM card is installed,
do not install or uninstall CPU blades, switch modules, fan units, power units, and power cords.

Connectors on Rear Panel of Blade Enclosure

The connectors on the rear panel of the Blade Enclosure are shown below:



Connectors on Rear Panel of Blade Enclosure

(1) UPPER port
Used when more than one Blade Enclosure is mounted in a rack and the Blade Enclosure inter connect is used.
Connected to the LOWER port of the Blade Enclosure installed above it with a LAN cable (straight). If the Blade Enclosure is installed at the top of the rack, the UPPER port is not used.

(2) LOWER port
Used when more than one Blade Enclosure is mounted in a rack and the Blade Enclosure inter connect is used.
Connected to the UPPER port of the Blade Enclosure installed beneath it with a LAN cable (straight). If the Blade Enclosure is installed at the bottom of the rack, the LOWER port is not used.

(3) EM1 port
Management LAN interface for the EM card installed in EM card slot EM1.
Manages the EM card and manages CPU blades via EM card.

(4) EM2 port
Management LAN interface for the EM card installed in EM card slot EM2.
Manages the EM card and manages CPU blades via EM card.

(5) EXT1 port
Used for UPS management.
Connected to the SNMP card in a UPS with a LAN cable.

(6) EXT2 port
Used for UPS management.
Connected to the SNMP card in another UPS with a LAN cable.

(7) Serial port
Not used in normal operation.

(8) Monitor connector
Connector for the display unit. Used by SIGMABLADE monitor and OSD function.

(9) Keyboard connector
Connector for the PS/2 keyboard. Used by SIGMABLADE monitor and OSD function.

(10) Mouse connector
Connector for the PS/2 mouse. Used by SIGMABLADE monitor and OSD function.

IMPORTANT:

- EM card N8405-019 does not support the Blade Enclosure inter connect feature. To use this feature, purchase EM card N8405-019A.
- The UPPER and LOWER ports on the Blade Enclosure are exclusively used for the Blade Enclosure inter connect. Do not connect any other devices to these ports.
- The EXT1 and EXT2 ports are exclusively used by the EM card for UPS management. Do not connect any other devices to these ports.

NOTE: Link local address 169.254.0.0/16 is used for the Blade Enclosure inter connect.

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Chapter 3

Using Command Line Console Feature

This section explains the command line console feature.

Connection

To use the command line console feature, a management console (e.g., personal computer) must be connected to the management port.

Connecting with Management Port

The EM card has two interfaces for the management port, the serial port and the network port (100Bate-Tx/10Base-T).

> **IMPORTANT:** To connect to the management network, use the"EM1 " and "EM2 " connectors on the rear of the Blade Enclosure.

> **NOTE:** Connect to the management port when performing initial setup or maintenance of the EM card.

Connection via Serial Port

Connect a management console (e.g., personal computer) to the serial port. When you use the EM card for the first time, the management console must be connected.

The management console must have communication software that conforms to VT-100.

Configure the communication software as follows:

- Baud rate: 115200bps
- Data length: 8 bits
- Parity: None
- Stop bit: 1
- Flow control: None

> **IMPORTANT:** A leased line cannot be connected to the serial port directly.

Connection via Network Port

Use TELNET or SSH (password authentication) to connect via the network. To login to the EM card via TELNET/SSH, use the assigned IP address.

NOTE: The default IP address is 192.168.1.8/24. You may connect with this IP address and then change it.However, the connection to the network is lost when you change the IP address. The SIGMABLADE monitor described in Section 5 also allows you to change the IP address.

IMPORTANT: To connect to the management network, use the "EM1 " and "EM2 " connectors on the rear of the Blade Enclosure.

Login and Basic Operations

This section describes how to input a command, login, logout, and change the password.

Command Input

The command input is described below.

About Command

The EM card accepts commands sent from the CLI (Command Line Interface). When the CLI is ready for command input, it displays a "$" sign as a prompt at the beginning of the line.

A command should be entered following the command prompt displayed on the screen. For commands that need parameters, those parameters should be separated with spaces.

Commands should be entered in 1-byte (half-size) alphanumeric and symbol or their combination. Up to 255 characters can be accepted for one command.

Error Messages during Command Input

When the command is incorrect, an error message appears.

Login / Logout

This section describes how to log in or log out of the EM card.

Login

When the EM card is accessed from the local console connected to the serial port or from the computer connected to the management port, login authentication is executed.

Enter the login user name and login password.

The login user name is "admin". The shipping default password is "admin".

```
------------------------------------------------------------------
em login: admin
Password:
.............
------------------------------------------------------------------
```

IMPORTANT: For security, change the default password.

Logout

Use the "exit" command to log out.

Shown below is an example of how to log out by entering the "exit" command from the local console connected to the serial port.

```
<Example>
------------------------------------------------------------------
$ exit
login:
------------------------------------------------------------------
```

NOTE: If you log out from a remote console connected via TELNET, the TELNET connection will be disconnected. Accordingly, the prompt "login:" will not be displayed.

Change Password

To change the password, use the "changepasswd" command.

Shown below is an example of changing the default password "admin" to "p@s$wD":

```
<Example>
------------------------------------------------------------------
$ changepasswd admin p@s$wD
------------------------------------------------------------------
```

Initial Setup

This section describes the setup steps necessary to use the EM card.

Basic Setup

This section describes the setting of date, time, and IP address for remote control.

Setting Date and Time

The EM card incorporates a calendar clock equipped with a backup battery.

Use the "setdate" command to set the current date and time.

Shown below is an example of setting the date and time to 9:10:11 am on July 8, 2006:

```
<Example>
------------------------------------------------------------------
$ setdate 2006/07/08 09:10:11

------------------------------------------------------------------
```

To check the date and time, use the "setdate" command with no argument.

Shown below is an example showing the current date and time is 9:10:20 on July 8, 2006:

```
<Example>
------------------------------------------------------------------
$ setdate
2006/07/08 09:10:20
------------------------------------------------------------------
```

Assigning the IP Address for Remote Control

To access the EM card from the remote console via Telnet, you must specify an IP address. The default IP address is 192.168.1.8/24.

> **NOTE:** This setting is effective for the EM1/EM2 ports on the rear of the Blade Enclosure.

To change the default IP address, access the EM card from the remote console by using the default IP address, or from the local console connected to the serial port.

Specify an IP address in the configuration file.

> **NOTE:** You can also use [SIGMABLADE Monitor] menu described in Chapter 5 to specify an IP address. In addition, you can use the Web console described in Chapter 4 to change an IP address. In either case, the new data is saved in the configuration file.

Use the "showemip" command to confirm the setting.

<Example>

```
------------------------------------------------------------------
$ showemip
192.168.1.8
------------------------------------------------------------------
```

Basic Setup in Configuration File

This section describes the basic setup of the configuration file.

Overview

A dedicated configuration file (in text format) is used to configure the EM card. To edit the configuration file, use the "vi" command.

File name: /var/nvdata/rw_poem.conf

> **NOTE:** A file that is created or edited on another computer can be transferred via FTP. In this case, use a character code "EUC," and line feed code "LF" in the file.

The following format is used in the configuration file:

```
-----------------------------------------------------------------
[<section-name>]
<item-name> = <set-value>
-----------------------------------------------------------------
```

When a character string is used for <set-value>, the character string must be enclosed with double quotation marks.

> **NOTE:** A line containing only space characters is ignored.

IP Address of EM Card

The two EM cards installed in the Blade Enclosure use four IP addresses in total. These addresses are classified into two types, "Fixed IP" is determined by the installation slot of the EM card, and "Floating IP" is used by the active EM card regardless of the installation slot.

The last bit of "Fixed IP" corresponds to the installation slot.

The last bit of "Floating IP" is defined as "0" for the active EM card and "1" for the standby EM card.

NOTE: The IP address of the EM card is classified by the last two bits as shown below:

00b: "Floating IP" that an active EM uses.
01b: "Floating IP" that a standby EM uses.
10b: "Fixed IP" of EM card installed in slot EM1.
11b: "Fixed IP" of EM card installed in slot EM2.

Default settings are shown below:

"Floating IP" of active EM: 192.168.1.8/24
"Floating IP" of standby EM: 192.168.1.9/24
"Fixed IP" of EM card in slot EM1: 192.168.1.10/24
"Fixed IP" of EM card in slot EM2: 192.168.1.11/24

Write the configuration file in the format as shown below:

```
-----------------------------------------------------------------
[RW_POEM_SECTION]
CFG_EM_IP = <IP Address>
CFG_EM_NETMASK = <Subnet Mask>
CFG_EM_GATEWAY = <Default Gateway>
-----------------------------------------------------------------
```

<IP Address>: Floating IP address that the active EM uses.

<Subnet Mask>: Subnet mask

<Default Gateway>: Default gateway

The above addresses must be specified with decimal numbers and periods such as XXX.XXX.XXX.XXX (XXX: between 0 and 255).

IMPORTANT: If only one EM card is installed, four IP addresses are reserved for it. Make sure that these IP addresses do not overlap with the IP addresses of other devices.

NOTE: Did you specify a multiple of 4 for the last digit of <IP Address>? If not, the EM card defines the last two bits as "00b."

```
<Example>
-----------------------------------------------------------------
[RW_POEM_SECTION]
CFG_EM_IP = 192.168.100.16
CFG_EM_NETMASK = 255.255.255.0
CFG_EM_GATEWAY = 192.168.100.254
-----------------------------------------------------------------
```

DHCP

The IP addresses of management I/F of CPU blades and switch modules are automatically assigned by the DHCP server of the EM card. Specify the base address and default gateway of the IP addresses to be assigned.

Bases addresses are assigned as shown below:

- CPU blade installed in slot #1: Base address +0
- CPU blade installed in slot #2: Base address +1
- CPU blade installed in slot #3: Base address +2

  :
- CPU blade installed in slot #8: Base address +7
- Switch module installed in slot #1: Base address +8
- Switch module installed in slot #2: Base address +9
- Switch module installed in slot #3: Base address +10
- Switch module installed in slot #4: Base address +11
- Switch module installed in slot #5: Base address +12
- Switch module installed in slot #6: Base address +13

Write the configuration file in the format as shown below:

```
-----------------------------------------------------------------
[RW_EMCTL_SECTION]
CFG_DHCP_BASE_IP = <IP Address>
CFG_DHCP_GATEWAY = <Default Gateway>
CFG_DHCP_ENABLE = <enable | disable>
-----------------------------------------------------------------
```

<IP Address>: Base IP address

<Default Gateway>: Default gateway

The above addresses must be specified with decimal numbers and periods such as XXX.XXX.XXX.XXX (XXX: between 0 and 255).

NOTES:

- Check that the "base address" is set so that its subnet mask is the same as that of the EM card.
- Check that the value "Base address + 23" is 254 or smaller.

"CFG_DHCP_ENABLE = <enable | disable>" indicates whether the DHCP server of the EM card is enabled (1) or disabled (0). The default setting is "1" (enable). Generally, you do not need to change the default.

IMPORTANT:

- The IP addresses for the management interface of the CPU blade/switch module are assigned based on the "base address." The "base address + 14" to "base address + 23" are used by the system. The consecutive addresses ranging from the "base address" to "base address + 23" must not be assigned to other devices.
- For UPS management, the "base address + 14" to "base address + 17" are assigned. The UPS to which a specific IP address is assigned cannot be defined. The consecutive addresses ranging from the "base address" to "base address + 23" must not be assigned to other devices.
- The IP addresses assigned to the switch module are valid for 24 hours at the longest (depending on the switch module). If you reassign the IP address for the switch module, the change may not be reflected immediately. In this case, cycle the AC power to restart the system or remove then insert the switch module.
  For the CPU blade, the IP addresses are automatically reassigned when the setting is changed.
- The IP addresses assigned to the UPS through DHCP are valid until the SNMP card installed on the UPS is reset. If you want to assign a new IP address to the UPS, you must reset the SNMP card.

<Example>

```
-----------------------------------------------------------------
[RW_EMCTL_SECTION]
CFG_DHCP_BASE_IP = 192.168.100.100
CFG_DHCP_GATEWAY = 192.168.100.254
CFG_DHCP_ENABLE = 1
-----------------------------------------------------------------
```

Setting Chassis Management Data

Specify the name of the Blade Enclosure in which the EM card is installed, and the rack name on which the Blade Enclosure is installed. In addition, specify the name of the switch module to be installed in the same Blade Enclosure in which the relevant EM card is installed. Specify the names with up to 31 ASCII characters.

> **NOTE:** If no rack name or Blade Enclosure name is specified, the value stored in the Blade Enclosure is used instead. When you specify the Blade Enclosure name and the rack name, those names are stored in the Blade Enclosure.
> If no switch module name is specified, the value stored in the switch module is used instead. When you specify the switch module name, that name is stored in the switch module.

Write the configuration file in the format as shown below:

Rack Name

```
-----------------------------------------------------------------
[RW_RACK_SECTION]
CFG_RACK_NAME = "<Rack Name>"
-----------------------------------------------------------------
```

<Rack Name>: rack-name

```
<Example>
-----------------------------------------------------------------
[RW_RACK_SECTION]
CFG_RACK_NAME = "Rack-A"
-----------------------------------------------------------------
```

> **NOTES:**
>
> - NEC ESMPRO Manager accepts single-byte characters including alphanumerics, period, hyphen, and underscore. Accordingly, it is recommended to use these characters when specifying a name.
> - If the Blade Enclosures inter connect is used, the rack name is shared. The rack name set in a Blade Enclosure will also be set in the other Blade Enclosures.
> - If nothing is specified for CFG_RACK_NAME, the value stored in the Blade Enclosure is used as "CFG_RACK_NAME" in the configuration file.

Blade Enclosure Name

```
-----------------------------------------------------------------
[RW_ENCLOSURE_SECTION]
CFG_ENCLOSURE_NAME = "<Enclosure Name>"
-----------------------------------------------------------------
```

<Enclosure Name>: blade-enclosure-name

<Example>

```
-----------------------------------------------------------------
[RW_ENCLOSURE_SECTION]
CFG_ENCLOSURE_NAME = "Enclosure-A"
-----------------------------------------------------------------
```

NOTES:

- NEC ESMPRO Manager accepts single-byte characters including alphanumerics, period, hyphen, and underscore. Accordingly, it is recommended to use these characters when specifying a name.
- If nothing is specified for CFG_ENCLOSURE_NAME, the value stored in the Blade Enclosure is used as "CFG_ENCLOSURE_NAME" in the configuration file.

Switch Module Name

```
-----------------------------------------------------------------
[RW_SWM_SECTION]
CFG_SWM_NAME1 = "<SWM-1 Name>"
CFG_SWM_NAME2 = "<SWM-2 Name>"
CFG_SWM_NAME3 = "<SWM-3 Name>"
CFG_SWM_NAME4 = "<SWM-4 Name>"
CFG_SWM_NAME5 = "<SWM-5 Name>"
CFG_SWM_NAME6 = "<SWM-6 Name>"
-----------------------------------------------------------------
```

<SWM-1 Name>: Name of the switch module installed in slot number 1

<SWM-2 Name>: Name of the switch module installed in slot number 2

<SWM-3 Name>: Name of the switch module installed in slot number 3

<SWM-4 Name>: Name of the switch module installed in slot number 4

<SWM-5 Name>: Name of the switch module installed in slot number 5

<SWM-6 Name>: Name of the switch module installed in slot number 6

<Example>

```
-----------------------------------------------------------------
[RW_SWM_SECTION]
CFG_SWM_NAME1 = "SWM-1"
-----------------------------------------------------------------
```

NOTE: NEC ESMPRO Manager accepts single-byte characters including alphanumerics, period, hyphen, and underscore. Accordingly, it is recommended to use these characters when specifying a name.

SNMP

Community Name

Specify a community name used for communication with the EM card via SNMP and SNMP trap transmitted by the EM card. Up to 32 ASCII characters can be used. The default name is "public."

Write the configuration file in the format as shown below:

```
-----------------------------------------------------------------
[RW_SNMP_SECTION]
CFG_GET_REQUEST_COMMUNITY = "<Get-request Community Name>"
CFG_SET_REQUEST_COMMUNITY = "<Set-request Community Name>"
CFG_TRAP_REQUEST_COMMUNITY = "<Trap-request Community Name>"
-----------------------------------------------------------------
```

<Get-request Community Name>: Community name of SNMP Get Request

<Set-request Community Name>: Community name of SNMP Set Request

<Trap-request Community Name>: Community name of SNMP Trap Request

<Example>

```
-----------------------------------------------------------------
[RW_SNMP_SECTION]
CFG_GET_REQUEST_COMMUNITY = "GetReqCmu"
CFG_SET_REQUEST_COMMUNITY = "SetReqCmu"
CFG_TRAP_REQUEST_COMMUNITY = "TrapReqCmu"
-----------------------------------------------------------------
```

Destination IP Address

Up to three destinations can be specified for sending a SNMP trap. The destination is specified with an IP address.

The default value is "0.0.0.0" for the three destinations.

Write the configuration file in the format as shown below:

```
-----------------------------------------------------------------
[RW_SNMP_SECTION]
CFG_IPADRESS01 = <IP Address 1>
CFG_IPADRESS02 = <IP Address 2>
CFG_IPADRESS03 = <IP Address 3>
-----------------------------------------------------------------
```

<IP Address 1>: IP address of destination 1

<IP Address 2>: IP address of destination 2

<IP Address 3>: IP address of destination 3

The above IP addresses must be specified with decimal numbers and periods such as XXX.XXX.XXX.XXX (XXX: between 0 and 255).

```
<Example>
-----------------------------------------------------------------
[RW_SNMP_SECTION]
CFG_IPADRESS01 = 192.168.100.200
CFG_IPADRESS02 = 192.168.100.210
CFG_IPADRESS03 = 192.168.100.220
-----------------------------------------------------------------
```

NOTE: The trap message will be sent to all the specified destinations.

Acknowledge Waiting Time and Retry Count of SNMP Trap

If NEC ESMPRO Manager receives a SNMP trap message, an acknowledge message is issued from NEC ESMPRO Manager. If an acknowledge message is not received within the specified time, the same trap is retransmitted. Specify the time to wait for the acknowledge message in seconds and the number of retries.

Write the configuration file in the format as shown below:

```
-----------------------------------------------------------------
[RW_SNMP_SECTION]
CFG_ACK_WAIT_TIME = <Ack Waiting Time>
CFG_MAX_RETRY = <Max Retry-Number>
-----------------------------------------------------------------
```

<Ack Waiting Time>: Acknowledge waiting time of SNMP trap (unit: second)

<Max Retry-Number>: Maximum retry number of SNMP trap

Setting Power Management

Specify the power management settings of the EM card.

Power Redundancy Mode

Specify the power redundancy mode of the EM card. The default setting is the [N+N redundant mode].

NOTES:

- In N+N redundant mode, each power supply unit is divided into two groups to configure the redundant power supply system. AC line group 1 is composed of PSU1 and PSU2, and AC line group 2 is composed of PSU3 and PSU4.
- In N+1 redundant mode, each power supply unit is controlled individually. Installing one power supply unit in addition to the required number of power units enables the redundant power supply system.

Power Control Policy

Specify the power control policy fof the EM card. The power control policy includes three modes: CPU performance, "maintain redundancy," and "recover redundancy." The default setting is the [CPU performance mode].

NOTE: The CPU performance mode makes the EM card prioritize performance of CPU blades. In this mode, if the EM card cannot accept a new power request from a CPU blade while maintaining power redundancy, the EM card releases the power redundant configuration and permits the new power request from the CPU blade. (If a power unit fails during operation under the release of the power redundant configuration, then the system may be forcibly shut down.)

The "maintain redundancy" mode makes the EM card accept a new power request from a CPU bladeonly if the power redundancy can be maintained. If the EM card cannot accept a new power request from a CPU blade while maintaining power redundancy, the EM card denies the request. In the "maintain redundancy" mode, no emergency measures are taken if the power redundancy is lost due to a failure of a power unit. (When a power unit fails with no power redundancy status, the system may be forcibly shut down.)

The "recover redundancy" mode makes the EM card accept a new power request from a CPU blade while maintaining power redundancy by limiting the performance of CPU blades to reduce the power consumption in the event of a power unit failure. (Depending on the operation of CPU blades, the EM card may not be able to reduce the power consumption to allow the power redundancy to be recovered.)

Write the configuration file in the format as shown below:

```
-----------------------------------------------------------------
[RW_EMCTL_SECTION]
CFG_PSU_MODE = <PSU mode>
CFG_POWSAVE_MODE = <Powersave mode>
-----------------------------------------------------------------
```

<PSU mode>: Power redundancy mode (2: N+1 redundant mode, 3: N+N redundant mode)

<Powersave mode>: Power control policy (2: CPU performance mode, 3: maintain redundancy mode, 4: recover redundancy mode)

<Example> (When set to N+N redundant and recover redundancy modes)

```
-----------------------------------------------------------------
[RW_EMCTL_SECTION]
CFG_PSU_MODE = 3
CFG_POWSAVE_MODE = 4
-----------------------------------------------------------------
```

NOTE: Check that "2" or "3" is specified as the power redundancy mode. If not, the default setting (N+N redundant mode) is used. Check that "2," "3," or "4" is specified as the power contol policy. If not, the default setting (CPU performance mode) is used.

IMPORTANT:

- The N8405-023 PSU works only in [N+N redundant mode]. Be sure to specify [N+N redundant mode] before using the N8405-023 PSU.
- Specify "maintain redundancy" or "recover redundancy" mode for the N8405-039 PSU. Under this condition, "N+1 redundant mode" is recommended.

Apply

Use the "apply" command to apply the settings in the configuration file to the EM card.

If two EM cards are installed, executing the "apply" command from the active EM card applies the configuration file to the standby EM card also.

IMPORTANT: Executing the "apply" command reboots the EM card. If two EM cards are installed, both cards are rebooted. While rebooting, the bridge and SNMP functions are stopped. Accordingly, the connection via the management LAN of CPU blades and switch modules is temporarily disconnected. In addition, system monitoring by NEC ESMPRO Manager is temporarily disabled. If a timeout error occurs, reconnect after the active EM card has rebooted.

NOTES:

- When two EM cards are installed, check if the standby EM card works normally. If the standby EM card is activated or faulty, the "apply" command cannot be executed.
  Wait for a moment until the standby EM card becomes ready.
  If the standby EM card is faulty, remove it before executing the "apply" command.
- It is recommended to make a backup copy of the configuration data of the EM card.
  For information on the backup/restore procedure, see "Backup/Restore of Configuration File" described later.

<When successful>

```
---------------------------------------------------------------------
$ apply
Restarting system.
---------------------------------------------------------------------
```

<When unsuccessful >

```
---------------------------------------------------------------------
$ apply
WARNING: Standby EM is inserted, but is not ready to apply the
configuration.
Please retry after a while.
---------------------------------------------------------------------
```

Backup/Restore of Configuration File

Backup

Connect via ftp with the user account "admin" to retrieve the configuration file (/var/nvdata/rw_poem.conf).

```
<Example>
-------------------------------------------------------------------------------------
[taro@sapphire taro]$ ftp 192.168.1.8
Connected to 192.168.1.8 (192.168.1.8).
220 neccmm FTP server (Version wu-2.6.2(1) Mon Mar 21 22:58:55 GMT 2005)
ready.
Name (192.168.1.8:taro): admin <-- Login with user account "admin"
331 Password required for admin.
Password:     <-- Enter password
.....
ftp> cd /var/nvdata/
ftp> get rw_poem.conf
-------------------------------------------------------------------------------------
```

Restore

1. Send the configuration file to the EM card.

   Connect via ftp with the user account "admin" to transfer the configuration file (rw_poem.conf) you have stored in the backup procedure to the directory /var/nvdata.

2. Apply the settings in the configuration file to the EM card.

   Connect to the EM card via Telnet or SSH with the user account "admin.".Log in to the EM card and execute the "apply" command.

If two EM cards are installed, executing the "apply" command from the active EM card applies the configuration file to the standby EM card also.

IMPORTANT: Executing the "apply" command reboots the EM card. If two EM cards are installed, both cards are rebooted.

Updating Firmware

This section describes the firmware update.

Updating EM Firmware

Procedure

Take the following steps to update the firmware:

1. Send the update file to the EM card via ftp.
2. Log in to the EM card with "admin," and run the "updatefw" command.
3. Log in to the EM card with "admin," and check the results of the firmware update.

IMPORTANT:

- It is recommended to update the firmware on the standby EM card first if the duplexed EM card configuration is used. Upon completion of the update, use the "switchover" command. Then, update the firmware of the other card.
- It may take several minutes to complete updating. Wait until the process is complete.

Transferring Update File

Send an image file to the EM card via ftp .

The user name for ftp is "nec_update" and the password is "nec_update."

The update files are listed below:

- u-boot.bin
- em.kernel
- em.rfs

> **NOTE:** All of the filesdo not need to be transferred.

<Example>

```
---------------------------------------------------------------------------------------
[taro@sapphire taro]$ ftp 192.168.1.70
Connected to 192.168.1.70 (192.168.1.70).
220 neccmm FTP server (Version wu-2.6.2(1) Mon Mar 21 22:58:55 GMT 2005) ready.
Name (192.168.1.70:taro): nec_update <-- login with "nec_update"
331 Password required for nec_update.
Password: <-- Password is "nec_update".
.....
ftp> bin                                    <-- Change to binary mode
200 Type set to I.
ftp> mput u-boot.bin em.kernel em.rfs
mput u-boot.bin? y
227 Entering Passive Mode (192,168,1,70,34,231)
.....
2474947 bytes sent in 0.85 secs (2.8e+03 Kbytes/sec)
ftp> ls   <-- Check
227 Entering Passive Mode (192,168,1,70,178,229)
150 Opening ASCII mode data connection for /bin/ls.
drwxr-xr-x 2 0 0 1024 Apr 28 14:27 bin
drwxr-xr-x 2 0 0 1024 Apr 28 14:27 lib
-rwxrwxrwx 1 0 0 844242 Apr 28 14:30 em.kernel
-rwxrwxrwx 1 0 0 2474947 Apr 28 14:30 em.rfs
-rwxrwxrwx 1 0 0 160472 Apr 28 14:30 u-boot.bin
226 Transfer complete.
ftp> bye
---------------------------------------------------------------------------------------
```

Checking Current Revision

Log in to the command line console and check the current revision by running the "revision" command.

The example below indicates that the current revision is "Revision 00.09":

<Example>

```
---------------------------------------------------------------------------
$ revision
Current revision: 00.09
---------------------------------------------------------------------------
```

Executing Update

Execute update by running the "updatefw -update" command. The detected update files are displayed, and you are prompted to select whether to execute or not. Enter "y" to execute or "n" to cancel. If "n" is entered, the screen returns to the command prompt screen.

> **NOTE:** The system will reboot automatically upon completion of update.

<Example>
```
---------------------------------------------------------------------------
$ updatefw -update
Current boot page: 1
Found 'em.kernel' 'em.rfs' under /nec_update/.
Execute update? [Y/N]Y
[Y] selected. Execute update...
## Update start ##
- Start updating kernel
> Erasing kernel: 100 % done.
> Updating kernel: 100 % done.
- Start updating fs
> Erasing fs: 100 % done.
> Updating fs: 100 % done.
- Create the file for next booting: done.
- Change boot page: 1 ==> 0 done.
- u-boot WDT enabled.done.
## Update end ##
Reboot system.
Restarting system.
---------------------------------------------------------------------------
```

Confirmation

Log in to the command line console and check the results by running the "updatefw -result" command.

<Example> (when successful)
```
---------------------------------------------------------------------------
$ updatefw -result
Update result: Succeeded.
---------------------------------------------------------------------------
```
<Example> (when unsuccessful)
```
---------------------------------------------------------------------------
$ updatefw -result
Update result: Failed.
---------------------------------------------------------------------------
```

Run the "revision" command to check the revision after update.

The example below indicates that the current revision is "Revision 01.00":

<Example>
```
---------------------------------------------------------------------------
$ revision
Current revision: 01.00
---------------------------------------------------------------------------
```

Updating SIGMABLADE Monitor Firmware

This section describes how to update the SIGMABLADE monitor firmware.

Procedure

Take following steps to update the firmware:

1. Send the update file to the active EM card via ftp.
2. Log in to the active EM card with "admin."
3. Run the "updateopcfw" command.

IMPORTANT:

- When update is executed, the KVM and DVD-ROM drive of the Blade Enclosure and USB devices connected to the USB port are disconnected. If USB devices are connected to the CPU blade, remove them before updating. If Linux is used as the operating system, unmount the DVD-ROM drive and USB devices. After the firmware of the SIGMABLADE monitor has been updated, selection of KVM and DVD/USB of the Blade Enclosure is performed from slot 1 of the CPU blade.
- It may take several minutes to complete updating. Wait until the process is complete.
- The EM card is reset after updating the firmware and a message [ITF Abnormal End] appears on the SIGMABLADE monitor. However, it is not an error.

NOTE: Did you access the active EM card?
The update process can be performed only from the active EM card. Executing the "updateopcfw" command from the standby EM card will cause an error to occur.

Transferring Update File

Send an update file to the EM card via ftp.

The user name for ftp is "nec_update" and the password is "nec_update."

<Example>

```
---------------------------------------------------------------------------------------
[taro@sapphire taro]$ ftp 192.168.1.70
Connected to 192.168.1.70 (192.168.1.70).
220 neccmm FTP server (Version wu-2.6.2(1) Mon Mar 21 22:58:55 GMT 2005) ready.
Name (192.168.1.70:taro): nec_update <-- login with "nec_update"
331 Password required for nec_update.
Password: <-- Password is "nec_update".
.....
ftp> bin                                    <-- Change to binary mode
200 Type set to I.
ftp> mput OPCxx_yy.HEX
mput OPCxx_yy.HEX? y
227 Entering Passive Mode (192,168,1,70,34,231)
.....
?????? bytes sent in 0.85 secs (2.8e+03 Kbytes/sec)
ftp> ls <-- Check
227 Entering Passive Mode (192,168,1,70,178,229)
150 Opening ASCII mode data connection for /bin/ls.
drwxr-xr-x 2 0 0 1024 Apr 28 14:27 bin
drwxr-xr-x 2 0 0 1024 Apr 28 14:27 lib
-rwxrwxrwx 1 0 0 ?????? Apr 28 14:30 OPCxx_yy.HEX
226 Transfer complete.
ftp> bye
---------------------------------------------------------------------------------------
```

Executing Update

Execute update by running the "updateopcfw" command.

The current revision and the revision after updating are displayed, and you are prompted to select whether to execute or not. Enter "y" to execute or "n" to cancel. If "n" is entered, the screen returns to the command prompt screen.

<Example>

```
--------------------------------------------------------------------------
$ updateopcfw OPC01_03.HEX
Current revision: 01.02
File revision: 01.03
Execute update? [Y/N]:Y
[Y] selected. Execute update...
Update succeeded.
Reset OPC.
--------------------------------------------------------------------------
```

Confirmation

After the SIGMABLADE monitor has restarted, run the "updateopcfw" command with the "-v" option switch to confirm the revision.

<Example>

```
--------------------------------------------------------------------------
$ updateopcfw -v
Current revision: aa.bb
--------------------------------------------------------------------------
```

Configuration File

This section describes items that can be specified in the configuration file (rw_poem.conf).

Syntax

The following format is used in the configuration file:

```
-----------------------------------------------------------------
[<section-name>]
<item-name> = <set-value>
-----------------------------------------------------------------
```

When a character string is used for <set-value>, the character string must be enclosed with double quotation marks.

Rack

Syntax

```
[RW_RACK_SECTION]
CFG_RACK_NAME = "<Rack Name>"
CFG_RACK_HIGHT = <Rack Hight>
```

<Rack Name>: Rack name

<Rack Hight>: Rack height in which the Blade Enclosure is installed (in unit of [U])

Description

- CFG_RACK_NAME

  Specify the rack name.

  The specified name is used by NEC ESMPRO Manager.

- CFG_RACK_HIGHT

  Specify the height of the rack to install the Blade Enclosure containing the relevant EM card (unit: [U]).

Notes

If nothing is specified for CFG_RACK_NAME, the value stored in the Blade Enclosure is used as "CFG_RACK_NAME" in the configuration file.

Blade Enclosure

Syntax

```
[RW_ENCLOSURE_SECTION]
CFG_ENCLOSURE_NAME = "<Enclosure Name>"
CFG_ENCLOSURE_U = <Enclosure Location>
```

<Enclosure Name>: Blade Enclosure name

<Enclosure Location>: Installation location of Blade Enclosure in the rack (unit: [U])

Description

- CFG_ENCLOSURE_NAME

  Specify the name of the Blade Enclosure.

  The specified name is used by NEC ESMPRO Manager.

- CFG_ENCLOSURE_U

  Specify the location where the Blade Enclosure containing the relevant EM card is installed in the unit of "U" counted from the bottom.

  For example, if the Blade Enclosure is installed in the bottom, the location is 1.
  If the Blade Enclosure (6U) is installed between 10 and 15, the location is 10.

Notes

If nothing is specified for CFG_ENCLOSURE_NAME, the value stored in the Blade Enclosure is used as "CFG_ENCLOSURE_NAME" in the configuration file.

CPU Blade

Syntax

```
[RW_SVB_SECTION]
CFG_SVB1_DELAY_TIME = <Boot delay time 1>
CFG_SVB2_DELAY_TIME = <Boot delay time 2>
CFG_SVB3_DELAY_TIME = <Boot delay time 3>
CFG_SVB4_DELAY_TIME = <Boot delay time 4>
CFG_SVB5_DELAY_TIME = <Boot delay time 5>
CFG_SVB6_DELAY_TIME = <Boot delay time 6>
CFG_SVB7_DELAY_TIME = <Boot delay time 7>
CFG_SVB8_DELAY_TIME = <Boot delay time 8>
```

Description

- CFG_SVBn_DELAY_TIME (n: number between 1 and 8 which corresponds to slot number)

  Specify the delay time for issuing power-on permission to each CPU blade. Specify the delay time in seconds.

  The default setting is "0" (no delay).

  NOTE: This feature is used to boot the CPU blade after the peripheral devices have started up when automatic power management by the AC linkage feature is enabled.

  IMPORTANT: The POWER switch does not power on the CPU blade during the delay time. Wait until the delay time is over.

Switch Module

Syntax

```
[RW_SWM_SECTION]
CFG_SWM_NAME1 = "<SWM-1 Name>"
CFG_SWM_NAME2 = "<SWM-2 Name>"
CFG_SWM_NAME3 = "<SWM-3 Name>"
CFG_SWM_NAME4 = "<SWM-4 Name>"
CFG_SWM_NAME5 = "<SWM-5 Name>"
CFG_SWM_NAME6 = "<SWM-6 Name>"
```

Description

- CFG_SWM_NAMEn (n: number between 1 and 6 which corresponds to slot number)

  Specify the name to be set for the switch module.

EM Card

Syntax

```
[RW_POEM_SECTION]
CFG_EM_IP = <IP Address>
CFG_EM_NETMASK = <Subnet Mask>
CFG_EM_GATEWAY = <Default Gateway>
CFG_EM_SYSLOG_ENABLE = TRUE|FALSE
CFG_EM_SYSLOGIP = <Syslog Server IP Address>
```

Description

- CFG_EM_IP

  Specify the floating addresses that the active EM card uses. The EM card uses four IP addresses based on these addresses. The address is identified by the lowest two bits and used as shown below:

  00b: "Floating IP" that an active EM uses.
  01b: "Floating IP" that a standby EM uses.
  10b: "Fixed IP" of EM card installed in slot EM1.
  11b: "Fixed IP" of EM card installed in slot EM2.

- CFG_EM_NETMASK

  Specify the subnet mask for the EM card.

- CFG_EM_GATEWAY

  Specify the IP address for the default gateway.

- CFG_EM_SYSLOG_ENABLE

  Specify whether to transfer the syslog of the EM card to an external syslog server or not. The default setting is "0." (The syslog is stored in the EM card.)

  1: TRUE (The syslog is transferred to an external syslog server.)

  0: FALSE (The syslog is stored in the EM car.)

- CFG_EM_SYSLOGIP

  Specify the IP address of an external syslog server when "TRUE" is specified for "CFG_EM_SYSLOG_ENABLE". (The syslog is transferred to an external syslog server.)

Notes

To transfer the syslog of the EM card to an external syslog server, be sure to start the syslog server before the EM card. If the syslog server is not started when the EM card attempts to write the syslog to the syslog server, the syslogd command is aborted and no syslog is collected.

EM Control

Syntax

```
[RW_EMCTL_SECTION]
CFG_DHCP_ENABLE = <enable I disable>
CFG_DHCP_BASE_IP = <IP Address>
CFG_DHCP_GATEWAY = <Default Gateway>
CFG_DHCP_NTPSRV = <NTP Server IP>
CFG_PSU_MODE = <PSU mode>
CFG_POWSAVE_MODE = <Powersave mode>
CFG_MAXPOW_SET = <Max Power>
CFG_ACINPUT_WAIT = <Input waitting time>
CFG_SVB_SHUTDOWN_TIMEOUT = <Shutdown time>
```

Description

- CFG_DHCP_ENABLE

  Specify whether the DHCP server of the EM card is enabled or not.

  1: TRUE (enable)

  0: FALSE (disable)

  The default setting is "1" (enable).

- CFG_DHCP_BASE_IP

  Specify the DHCP base IP address. Then, addresses are assigned as shown below:

  – CPU blade installed in slot #1: Base address +0
  – CPU blade installed in slot #2: Base address +1
  – CPU blade installed in slot #3: Base address +2
  :
  – CPU blade installed in slot #8: Base address +7
  – Switch module installed in slot #1: Base address +8
  – Switch module installed in slot #2: Base address +9
  :
  – Switch module installed in slot #6: Base address +13

- CFG_DHCP_GATEWAY

  Specify the IP address of the default gateway.

- CFG_DHCP_NTPSRV

  The DHCP server of the EM card can distribute an external NTP server address to the management I/F of CPU blades and switch modules. Specify the IP address of an external NTP server.

- CFG_PSU_MODE

  Specify the power redundancy mode that the EM card uses.

  <PSU mode>: power redundancy mode
  (2: N+1 redundant mode, 3: N+N redundant mode)

The default setting is "3" (N+N redundant mode).

- CFG_POWSAVE_MODE

  Specify the power control policy that the EM card uses.

  <Powersave mode>: power control policy

  (2: CPU performance mode, 3: maintain redundancy mode, 4: recover redundancy mode)

  The default setting is "2" (CPU performance mode).

- CFG_MAXPOW_SET

  Specify the maximum power consumption managed by the EM card. When this item is set to "0," the EM card calculates the value used for the maximum power consumption based on the unit and UPS configuration.

  <Max Power>: Maximum power consumption specified [W]

  The default setting is "0."

- CFG_ACINPUT_WAIT

  With the power redundancy mode set to the N+N redundant mode, the system waits until power is supplied to each of the two AC line groups. Specify the waiting time in seconds.

  <Input waiting time>: Input power waiting time at start [sec]

  The default setting is "3" seconds.

- CFG_SVB_SHUTDOWN_TIMEOUT

  When the EM card provides UPS management, it can direct CPU blades to shut down when power to the UPS is interrupted. Specify the time the EM card waits until the shutdown is complete in seconds.

  <Shutdown time> : Timeout period after execution of blade shutdown [sec]

  The default setting is "300" seconds.

Notes

A value where the "base address + 23" is 254 or smaller must be specified in CFG_DHCP_BASE_IP. Enable the DHCP server when the EM card provides UPS management to enable the EM card to distribute IP addresses.

SIGMABLADE Monitor

Syntax

```
[RW_EXPRESS_SECTION]
CFG_EXPRESS_PASSWORD = "<password>"
CFG_EXPRESS_ENABLE = TRUE | FALSE
CFG_EXPRESS_LCD_BACKLIGHT_OFF_TIMER = <offtimer>
```

Description

- CFG_EXPRESS_PASSWORD

  Stores the password used for setup of the EM card on the SIGMABLADE monitor.

- CFG_EXPRESS_ENABLE

  Specify whether to enable or disable the password stored in CFG_EXPRESS_PASSWORD.

  1: TRUE (Enable)

  0: FALSE (Disable)

- CFG_EXPRESS_LCD_BACKLIGHT_OFF_TIMER

  Specify the time to automatically turn off the backlight of the SIGMABLADE monitor. The default value is one minute.

Notes

The value set in CFG_EXPRESS_PASSWORD is encrypted and stored. Accordingly, you cannot edit it by using the "vi" command.

SNMP

Syntax

```
[RW_SNMP_SECTION]
CFG_GET_REQUEST_COMMUNITY = "<Get-request Community Name>"
CFG_SET_REQUEST_COMMUNITY = "<Set-request Community Name>"
CFG_TRAP_REQUEST_COMMUNITY = "<Trap-request Community Name>"
CFG_IPADRESS01 = <IP Address 1>
CFG_IPADRESS02 = <IP Address 2>
CFG_IPADRESS03 = <IP Address 3>
CFG_ACK_WAIT_TIME = <Ack Waiting Time>
CFG_MAX_RETRY = <Maximum retry-number>
CFG_RESULT_PORT = <Port Number>
CFG_ANTI_TRAP_LOST = <enable | disable>
CFG_LANGUAGE = <Language>
```

Description

- CFG_GET_REQUEST_COMMUNITY

  Specify the community name for SNMP Get Request. The default is "public."

- CFG_SET_REQUEST_COMMUNITY

  Specify the community name for SNMP Set Request. The default is "public."

  If no name is specified for <Set-request Community Name>, SNMP Set request is disabled.

- CFG_TRAP_REQUEST_COMMUNITY

  Specify the community name for SNMP Trap. The default is "public."

- CFG_IPADRESS0n (n: number between 1 and 3)

  Specify the SNMP Trap destination (up to three destinations can be specified). The default is "0.0.0.0"

- CFG_ACK_WAIT_TIME

  Specify the reply waiting time for SNMP Trap (unit: [second]). The default is 10 seconds.

- CFG_MAX_RETRY

  Specify the number of retries of SNMP Trap. The default is three retries.

- CFG_RESULT_PORT

  Specify the port number to receive the acknowledge response of trap message if the acknowledge response is enabled. The default value is 5002. Generally, you do not need to change this value.

- CFG_ANTI_TRAP_LOST

  Specify whether to enable or disable the acknowledge response of the trap message. The default value is "0" (disable).

  0: TRUE (disable)

  1: FALSE (enable)

- CFG_LANGUAGE

  Specify the language used in the trap message.

  1: Japanese
  2: English

  The default value is "1" (Japanese).

Notes

The trap message is sent to all the specified destinations.

Linkage with NEC DianaScope

Syntax

```
[RW_DSG_SECTION]
CFG_DSG_PASSWORD = <password>
CFG_DSG_ENABLE = <enable | disable>
CFG_DSG_IP1 = <IP Address1>
CFG_DSG_PORT1 = <port1>
CFG_DSG_IP2 = <IP Address2>
CFG_DSG_PORT2 = <port2>
```

Description

- CFG_DSG_PASSWORD

  Stores the user password for linking with NEC DianaScope. See the Notes below.

- CFG_DSG_ENABLE

  Specify whether to enable or disable linkage with NEC DianaScope. The default value is "1" (enable).

  1: (enable)

  0: (disable)

- CFG_DSG_IP1

  Specify the IP address of the primary destination for configuration change notification. The default value is "0.0.0.0"

- CFG_DSG_PORT1

  Specify the port number of the primary destination for configuration change notification. The default value is "0."

- CFG_DSG_IP2

  Specify the IP address of the secondary destination for configuration change notification. The default value is "0.0.0.0"

- CFG_DSG_PORT2

  Specify the port number of the secondary destination for configuration change notification. The default value is "0."

Notes

The value set in CFG_EXPRESS_PASSWORD is encrypted and stored. Accordingly, you cannot edit it. To change the password, use the "setdsl" command as described in "Command Reference."

If you have changed the value set in CFG_DSG_PASSWORD, delete the values following "CFG_DSG_PASSWORD= ," and reboot the EM card. This sets the default password to "guest" in the EM card. After that, you can set a new password by using the "setdsl" command.

Notification of configuration change is made in the following cases:

- A CPU blade, switch module, and/or PSU is installed or removed.
- The status of the EM card is changed (from Standby to Active).
- The rack name, Blade Enclosure name, and/or CPU blade name is changed.

UPS Management

Syntax

```
[RW_UPS_SECTION]
CFG_USE_UPS_MNG = <enable I disable>
CFG_NUM_OF_UPSES = <Number of UPSs>
CFG_NUM_OF_POWERSUPPLIES = <Number of PSUs>
CFG_MIN_NUM_OF_UPSES = <Minimum number of UPSs>
CFG_UPS_INPUT_LOST_DELAY = <Input Lost Delay>
CFG_UPS_COMMUNICATION_LOST_DELAY = <Communication Lost Delay>
CFG_UPS_ONLINE_DELAY = <Online Delay>
CFG_UPS_TIMED_SLEEP_PERIOD = <Sleep period>
CFG_UPS_GET_COMMUNITY_NAME = "<Get-request Community Name>"
CFG_UPS_SET_COMMUNITY_NAME = "<Set-request Community Name>"
CFG_UPS1_SERIAL_NUMBER = <UPS1 Serial number>
CFG_UPS1_CAPACITY = <UPS1 Capacity>
CFG_UPS2_CAPACITY = <UPS2 Capacity>
CFG_UPS3_SERIAL_NUMBER = <UPS3 Serial number>
CFG_UPS3_CAPACITY = <UPS3 Capacity>
CFG_UPS4_SERIAL_NUMBER = <UPS4 Serial number>
CFG_UPS4_CAPACITY = <UPS4 Capacity>
```

Description

- CFG_USE_UPS_MNG

  Specify whether UPS management by the EM card is enabled or not.

  1: TRUE (enable)

  0: FALSE (disable)

  The default setting is "0" (disable).

- CFG_NUM_OF_UPSES

  Specify the number of UPS's managed by the EM card. The default setting is "0."

- CFG_NUM_OF_POWERSUPPLIES

  Specify the number of power units (PSU's) installed in the Blade Enclosure.

  The default setting is "1."

- CFG_MIN_NUM_OF_UPSES

  Specify the minimum number of UPS's required to maintain system operation. When power to a UPS is interrupted, CPU blades can be shut down. If the number of available UPS's falls below the specified minimum, CPU blades are shut down.

  Value "0" does not shut down CPU blades.

  The default setting is "0" (no shutdown of CPU blades).

- CFG_UPS_INPUT_LOST_DELAY

  Specify the time in seconds the EM card waits until it determines that power to the UPS's is interrupted. This prevents CPU blades from being shut down due to momentary power interruption. If power to the UPS's is interrupted, then the system is powered by battery. The default setting is "60" seconds.

- CFG_UPS_COMMUNICATION_LOST_DELAY

  Specify the time in seconds the EM card waits until it determines that a UPS is unavailable after communication with the UPS by SNMP is lost. The default setting is "180" seconds.

- CFG_UPS_ONLINE_DELAY

  Specify the time in seconds the EM card waits for connections of online UPS's at system boot.

  If the the number of online UPS's does not reach the specified value within this time, the EM card calculates the maximum power consumption possible for the system assuming that the remaining UPS's are not connected.

  The default setting is "180" seconds.

  Online UPS means one in a normal output state (online or manual bypass state).

- CFG_UPS_TIMED_SLEEP_PERIOD

  When CPU blades are shut down due to power interruption of UPS's, all the UPS's can be entered into the sleep state temporarily after completion of the shutdown.

  Specify the sleep time in minutes. Set the time with multiples of 6 (from 6 to 60 minutes).

  When the value is set to "0," only the battery-driven UPS's are entered into the sleep state.

  The default setting is "0."

  Generally, the default setting does not need to be changed.

- CFG_UPS_GET_COMMUNITY_NAME

  Specify the community name for SNMP Get request issued to UPS's. The default setting is "public."

- CFG_UPS_SET_COMMUNITY_NAME

  Specify the community name for SNMP Set request issued to UPS's. The default setting is "private."

- CFG_UPSn_SERIAL_NUMBER, CFG_UPSn_CAPACITY

  The serial numbers and power capacities [W] of up to four UPS's can be specified. The default settings are blank characters and "0" [W]. Generally, you do not need to specify these values.

Notes

UPS management by the EM card requires that the DHCP server of the EM card distribute IP addresses. Accordingly, enable the DHCP feature of the EM card.

UPS management by the EM card prevents UPS's from being controlled by ESMPRO/AutomaticRunningController. When UPS control by ESMPRO/AutomaticRunningController is required, disable UPS management by the EM card.

When using Windows 2003 Server, "Logon is not required for system shutdown" should be enabled in the Security Policy tab.

When communication with a UPS is lost, the EM card determines that the UPS is no longer available. If the number of available UPS's falls below the minimum required for normal operation, the EM card shuts down the CPU blades and turns off the UPS's.

Command Reference

This section describes the available commands in the Command Line Console of the EM card and their application.

apply	Used to apply the settings of the configuration file to the EM card.
changepasswd	Used to change the password.
setdate	Used to set the date and time.
connectswitch	Used to log in to the serial interface to configure the switch module.
switchover	Used to select the active or standby EM card.
collect	Used to collect logs.
showemip	Used to view the IP address assigned to the EM card.
revision	Used to view the revision of the EM firmware.
updatefw	Used to update the EM firmware.
updateopcfw	Used to update the SIGMABLADE monitor firmware.
setdsl	Used to activate the menu to set linkage with NEC DianaScope.
ecmaint	Used to set the Blade Enclosure inter connect and indicate the status of the connection.

apply

Outline

Apply the settings of the configuration file to the EM card.

Syntax

apply

Parameter

None

Details

Apply the settings of the configuration file (rw_poem.conf) to the EM card. When two EM cards are installed, the settings for the active EM card are applied to both cards. This command can be executed only in the active EM card.

Notes

Reboots the EM firmware when the configuration file is applied. When two EM cards are installed, both EM firmwares are rebooted simultaneously.

The bridge and SNMP functions are stopped during rebooting. Accordingly, the CPU blade and switch module are temporarily disconnected from the LAN. In addition, monitoring the system by NEC ESMPRO is temporarily disabled. If a timeout error occurs, reconnect after the active EM card has rebooted.

When two EM cards are installed, the standby EM card must be operating normally. If the standby EM card is activated or faulty, the "apply" command cannot be executed.

Wait until the standby EM card becomes ready, then execute this command.

If the standby EM card fails, remove it. Then, execute this command.

Examples

```
<When successful>
-------------------------------------------------------------------------
$ apply
Restarting system.
-------------------------------------------------------------------------
<When unsuccessful >
-------------------------------------------------------------------------
$ apply
WARNING: Standby EM is inserted, but is not ready to apply the
configuration.
Please retry after a while.
-------------------------------------------------------------------------
```

changepasswd

Outline

Change the password for the admin user.

Syntax

changepasswd <old-password> <new-password>

Parameter

<old-password>

Explanation: Current password

<new-password>

Explanation: New password

Details

Change the password for the admin user. When two EM cards are installed, the new password is applied to both cards. This command can be executed only on the active EM card.

Notes

The result of this command is reflected in the configuration file (rw_poem.conf).

Examples

```
---------------------------------------------------------------------------
$ changepasswd EmCdCli Poem&meoP
---------------------------------------------------------------------------
```

setdate

Outline

Set the date and time on the EM card.

Syntax

setdate [<YYYY/MM/DD HH:MM:SS>]

Parameter

<YYYY/MM/DD HH:MM:SS>

Explanation: Specify the date in Year/Month/Day Hour:Minute:Second format.

When not specified

Explanation: Shows the current date and time.

Details

Set the date and time of the built-in clock of the EM card (RTC). Specify the year in 4-digit Christian era and two-digit hour (0 to 23). If no value is specified for the parameter, the current date and time is displayed. When two EM cards are installed, the setting is applied to both cards. This command can be executed only on the active EM card.

Notes

None

Examples

```
---------------------------------------------------------------------
$ setdate 2006/07/08 09:10:11
---------------------------------------------------------------------
---------------------------------------------------------------------
$ setdate
2006/07/08 09:10:20
---------------------------------------------------------------------
```

connectswitch

Outline

Connect the EM card via the serial interface for configuration of a switch module.

Syntax

connectswitch [<options>] <switch-number>

Parameter

<options>

-b [9600|115200]

Explanation: Specify the baud rate. The default is "9600."

-f [none|x|hard]

Explanation: Specify the flow control. The default is "none."

none: No flow control

x: Xon/Xoff software flow control

hard: RTS/CTS hardware flow control

<switch-number>

Slot number of the switch module to be connected.

Details

Connect the EM card via the serial interface for configuration of a switch module.

To disconnect, type the following character after pressing "Ctrl+M" (or Enter).

"~." (tilde and period)

This command can be executed only on the active EM card.

Notes

For more information about the serial interface for configuration of a switch module, refer to the User's Guide of the switch module.

Examples

```
---------------------------------------------------------------------------
$ connectswitch -b 9600 -f hard 3
Connect to switch3.
Type "Ctrl-M ~." to exit.
Initializing O
HammerOS(tm)
BS Series Switch Software
Version 2.2(Build 0007 on 10:39:29 Jun 1 2006)
Copyright (c) Harbour Networks Limited. All Rights Reserved
Running on BS-6GE2SFP Switch Module Hardware
NEC>
---------------------------------------------------------------------------
```

switchover

Outline

Switch over the active or standby status of the EM card.

Syntax

switchover

Parameter

None

Details

Switches "active" and "standby" between two EM cards installed in the same Blade Enclosure. This command can be executed on either the active or standby EM card.

Notes

The EM1 and EM2 ports on the rear of the Blade Enclosure may temporarily be disconnected when the switchover command is executed.

Examples

```
--------------------------------------------------------------------------
$ switchover
--------------------------------------------------------------------------
```

collect

Outline

Collect the logs of the EM card.

Syntax

collect

Parameter

None

Details

Collects log data on EM firmware and creates a file "/logcollect/collect.tgz." This command can be executed on either the active or standby EM card.

Notes

None

Examples

```
---------------------------------------------------------------------
$ collect
---------------------------------------------------------------------
```

revision

Outline

Displays the firmware revision of the EM card.

Syntax

revision

Parameter

None

Details

Displays the firmware revision of the EM card. This command can be executed on either the active or standby EM card.

Notes

None

Examples

```
---------------------------------------------------------------------
$ revision
Current revision: 01.00
---------------------------------------------------------------------
```

showemip

Outline

Displays the IP address assigned to the EM card.

Syntax

showemip

Parameter

None

Details

Displays the IP address assigned to the EM card. This command can be executed on either the active or standby EM card.

Notes

None

Examples

```
---------------------------------------------------------------------
$ showemip
192.168.1.9
---------------------------------------------------------------------
```

updatefw

Outline

Updates the EM firmware.

Syntax

updatefw <options>

Parameter

<options>

-update

Explanation: Executes update of the EM firmware.

-result

Explanation: Displays the results of updating the EM firmware.

Details

Send the update file via ftp prior to execution of the command. (The user name for ftp is "nec_update" and the password is "nec_update.")

The update files are shown below:

– u-boot.bin

– em.kernel

– em.rfs

Specify the "update" option to update the EM firmware.

Specify the "result" option to display the results of updating the EM firmware.

This command can be executed on either the active or standby EM card, however, it is recommended to execute it on the standby EM card.

Notes

The EM firmware is rebooted at the end of the update process. If the update is executed from the active EM in the duplexed EM configuration, the active or the standby state is switched over.

Examples

(When update is in progress)

```
---------------------------------------------------------------------------
$ updatefw -update
Current boot page: 1
Found 'em.kernel' 'em.rfs' under /nec_update/.
Execute update? [Y/N]Y
[Y] selected. Execute update...
## Update start ##
- Start updating kernel
> Erasing kernel: 100 % done.
> Updating kernel: 100 % done.
- Start updating fs
> Erasing fs: 100 % done.
> Updating fs: 100 % done.
- Create the file for next booting: done.
- Change boot page: 1 ==> 0 done.
- u-boot WDT enabled.done.
## Update end ##
Reboot system.
Restarting system.
---------------------------------------------------------------------------
```

(When successful)

```
---------------------------------------------------------------------------
$ updatefw -result
Update result: Succeeded.
---------------------------------------------------------------------------
```

(When unsuccessful)

```
---------------------------------------------------------------------------
$ updatefw -result
Update result: Failed.
---------------------------------------------------------------------------
```

updateopcfw

Outline

Updates the SIGMABLADE monitor firmware.

Syntax

updateopcfw [<options>] [<filename>]

Parameter

<filename>

Explanation: Update file of SIGMABLADE monitor firmware

Format of file name: OPCxx_yy.HEX (xx: 00 to FF)

<options>

-y

Explanation: Executes the update without confirmation.

Specifying a file name in <filename> is required.

-v

Explanation: Indicates the current revision.

If the file name is specified in <filename>, the revision of the file is also displayed.

-c

Explanation: Executes only initialization of setup information.

No need to specify <filename>.

None

Explanation: Executes the update with confirmation.

Specifying a file name in <filename> is required.

Details

Updates the SIGMABLADE monitor firmware. If you execute this command without specifying any options, you will be asked whether to execute the update or not. Specifying [y] starts the update.

Notes

A file name must be specified except for the "-v" and "-c" options. If no file name is specified or the specified file name is not found, an error message will be displayed.

Examples

```
---------------------------------------------------------------------------
$ updateopcfw OPC01_02.HEX
Current revision: 01.01
File revision: 01.02
Execute update? [Y/N]:Y
[Y] selected. Execute update...
Update succeeded.
Reset OPC.
---------------------------------------------------------------------------
---------------------------------------------------------------------------
$ updateopcfw -v
Current revision: 01.02
---------------------------------------------------------------------------
```

setdsl

Outline

Activates the menu to set linkage with NEC DianaScope.

Syntax

setdsl

Parameter

None

Details

– Changes the user password when using the EM card in linkage with NEC Dianascope. The password must be 16 characters or less.

– Enables or disables linkage with NEC DianaScope. The default value is "Enabled." The connection from NEC DianaScope to the EM card is enabled.

The EM cards in slot EM1 and EM2 use the following IP addresses for linkage with NEC DianaScope:

[Fixed IP] of the EM card installed in slot EM1

[Fixed IP] of the EM card installed in slot EM2

NOTE: See [Initial Setup] → [Configuration File] → [IP Address of EM Card] for details.

This command can be executed only on the active EM card.

ecmaint

Outline

Sets the Blade Enclosure inter connect and indicates the status of the connection.

Syntax

ecmaint <options>

Parameter

<options>

-l

Explanation: Indicates the status of the Blade Enclosure inter connect.

-e

Explanation: Enables the Blade Enclosure inter connect.

-d

Explanation: Disables the Blade Enclosure inter connect.

-h

Explanation: Indicates the command execution procedure.

Details

When the "-l" option is specified:

Indicates whether the Blade Enclosure inter connect is enabled or disabled, the number of detected Blade Enclosures, and the consistency of the information on the Blade Enclosure inter connect.

> **NOTE:** The Blade Enclosure inter connect information indicates the number of Blade Enclosures subject to the Blade Enclosure inter connect and the positional relationship among the Blade Enclosures. The information is saved in a file on the EM card installed in every Blade Enclosure.

Output sample:

```
Blade Enclosure Inter Connect:                    ENABLE
Detected Blade Enclosures:                        5
Blade Enclosure Inter Connect information matching: MISMATCH
```

Explanation of output:

■ Blade Enclosure Inter Connect

Indicates whether the Blade Enclosure inter connect is enabled or disabled.

If enabled: ENABLE

If disabled: DISABLE

■ Detected Blade Enclosures

Indicates the number of Blade Enclosures currently detected.

■ Blade Enclosure Inter Connect information matching

Indicates whether the Blade Enclosure inter connect information saved in every Blade Enclosure matches the current connect configuration or not.

Matching: MATCH

Other than above: MISMATCH

If "MISMATCH" appears, the following action is required:

– When the number of detected Blade Enclosures matches the number of connected Blade Enclosures

The Blade Enclosure inter connect information is inconsistent with the current connect configuration due to changes of the connect configuration. Update the Blade Enclosure inter connect information. Executing the -e or -d option of this command allows the Blade Enclosure inter connect information to be updated.

– When the number of detected Blade Enclosures does not match the number of connected Blade Enclosures

Check the following and execute the command again.

- Make sure that all the Blade Enclosures are powered on.
- Make sure that the LAN cables (straight) for the Blade Enclosure inter connect are correctly connected.
- Make sure that the EM cards in all the Blade Enclosures support the Blade Enclosure inter connect.

When the "-e" option is specified:

Enables the Blade Enclosure inter connect. The Blade Enclosure inter connect information in every Blade Enclosure is updated according to the current connect configuration.

When the "-d" option is specified:

Disables the Blade Enclosure inter connect. The Blade Enclosure inter connect information in every Blade Enclosure is updated to "disabled."

It takes several seconds to execute this command. Only active EM cards can execute this command.

Notes

To use the Blade Enclosure inter connect, EM card N8405-019A is required. EM card N8405-019 does not support the Blade Enclosure inter connect.

Examples

[When Blade Enclosure inter connect is disabled]

```
---------------------------------------------------------------------------------------
$ ecmaint -l
Blade Enclosure Inter Connect: DISABLE
Detected Blade Enclosures: 5
Blade Enclosure Inter Connect information matching: MATCH
---------------------------------------------------------------------------------------
(When Blade Enclosure inter connect is enabled)
---------------------------------------------------------------------------------------
$ ecmaint -l
Blade Enclosure Inter Connect: ENABLE
Detected Blade Enclosures: 5
Blade Enclosure Inter Connect information matching: MATCH
---------------------------------------------------------------------------------------
[When Blade Enclosure inter connect is enabled but mismatch occurs]
---------------------------------------------------------------------------------------
$ ecmaint -l
Blade Enclosure Inter Connect: ENABLE
Detected Blade Enclosures: 5
Blade Enclosure Inter Connect information matching: MISMATCH
....
---------------------------------------------------------------------------------------
(When Blade Enclosure inter connect is set to enabled)
---------------------------------------------------------------------------------------
$ ecmaint -e
enable successful, 5 enclosures
---------------------------------------------------------------------------------------
(When Blade Enclosure inter connect is set to disabled)
---------------------------------------------------------------------------------------
$ ecmaint -d
disable successful, 5 enclosures
---------------------------------------------------------------------------------------
```

Chapter 4

Using Web Console Feature

This section describes how to use the Web console feature.

> **NOTE:** Make sure that the following features are enabled on the Web browser:
>
> - Cookies
> - JavaScript
>
> These two features must be enabled to use the Web Console feature.

Connection

You can access the Web console of the EM card from the following URL by using a floating IP address of the active EM card.

URL: https://<ActiveEM Floating IP Address>/index.html

> **NOTES:**
>
> - Default IP address:
>   https://192.168.1.8/index.html
> - It is recommended to use SSL for security. If SSL is unavailable, "http:" may be used to access the Web console.

Login and Basic Operation

Login/Logout

Login

When you access the URL from the Web browser, the login menu as shown below appears:

Type your user name and password, and click the [Login] button.

When the user name and password are verified, you can log in to the system.
If the user name and/or password do not match the registered one, logging into the system will fail.

When you click [Go to Standby EM Card], a login window for the standby EM card is displayed

Type your user name and password, and click the [Login] button.

NOTE: For more information about user name/password, see Chapter 3.

Logout

When you log out, the screen as shown below appears:

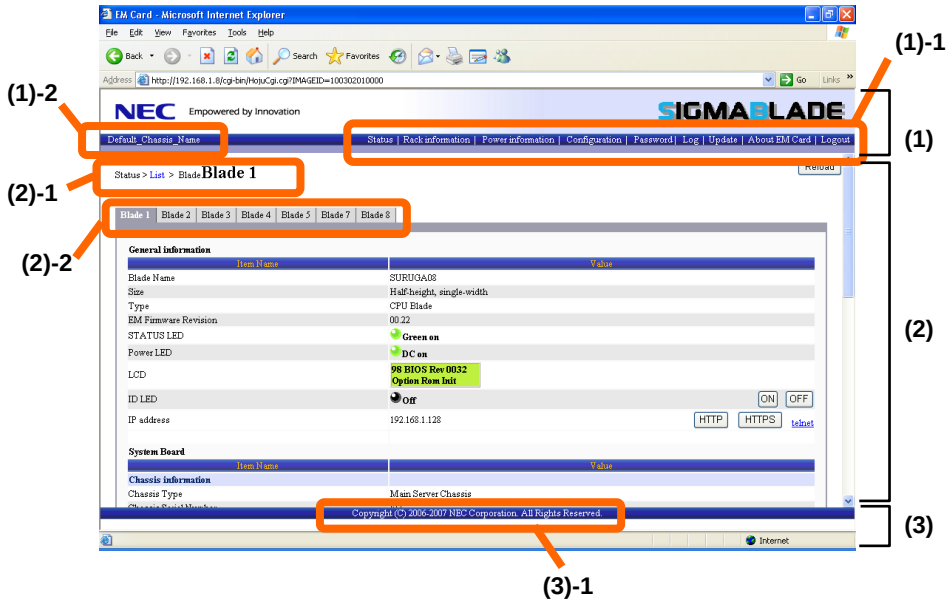
Click [Go to login page] to go to the login page.

Screen Layout

The screen is composed of three components: header, contents, and footer.

Component Names

The names of components are as follows:



(1) Header

(1)-1: Menu bar

(1)-2: Blade Enclosure name

(2) Contents

(2)-1: Title

(2)-2: Tab

(3) Footer

(3)-1: Copyright

Basic Operations

Selecting Menu Items

When you click an item in the menu bar, the contents of the selected menu item are displayed in the contents section.

Selecting Tabs in Menu Items

Clicking the tab allows you to view other contents in the selected menu item.

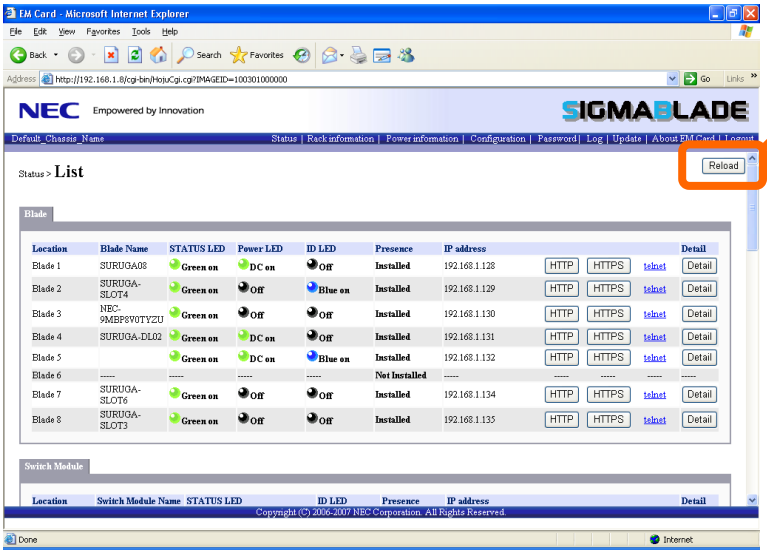
Displaying System Status

When you click [Status] in the menu bar, the status of the modules of the system is displayed.

NOTE: After successful login, the System Status List is displayed first.

System Status List

On the [Display status > List] screen, the statuses of CPU blades, Switch Modules, Blade Enclosure, EM Cards, Power Units, Fan Units, and UPS's are displayed as shown in the figure below:

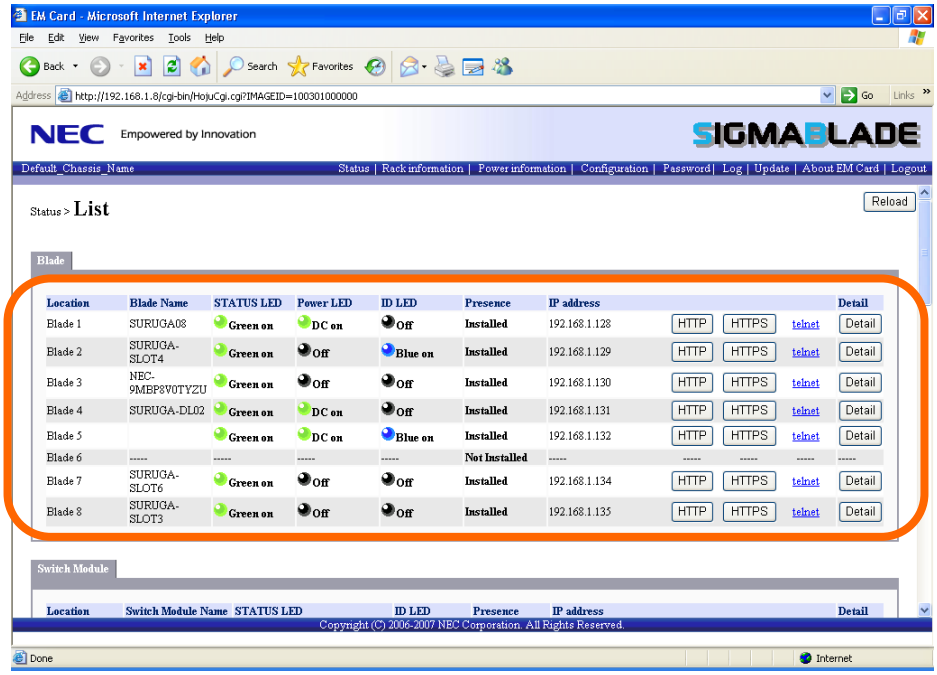


NOTE: The on-screen information is not updated automatically. To view the latest information, click the [Reload] button.

CPU Blades

CPU blades are listed as shown in the figure below.

The installation location, CPU blade name, STATUS LED condition, Power LED condition, ID LED condition, installation status, and IP address of EXPRESSSCOPE Engine are displayed from left to right. Next to these items are buttons to link with the remote management feature of EXPRESSSCOPE Engine and to display detailed information.


EM Card - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://192.168.1.8/cgi-bin/HojuCgi.cgi?IMAGEID=100301000000
Go Links
NEC Empowered by Innovation
SIGMABLADE
Default_Chassis_Name
Status | Rack information | Power information | Configuration | Password | Log | Update | About EM Card | Logout
Status > List
Reload
Blade
Location Blade Name STATUS LED Power LED ID LED Presence IP address Detail
Blade 1 SURUGA08 Green on DC on Off Installed 192.168.1.128 HTTP HTTPS telnet Detail
Blade 2 SURUGA-SLOT4 Green on Off Blue on Installed 192.168.1.129 HTTP HTTPS telnet Detail
Blade 3 NEC-9MBP8V0TYZU Green on Off Off Installed 192.168.1.130 HTTP HTTPS telnet Detail
Blade 4 SURUGA-DL02 Green on DC on Off Installed 192.168.1.131 HTTP HTTPS telnet Detail
Blade 5 Green on DC on Blue on Installed 192.168.1.132 HTTP HTTPS telnet Detail
Blade 6 ----- ----- ----- ----- Not Installed ----- ----- ----- ----- -----
Blade 7 SURUGA-SLOT6 Green on Off Off Installed 192.168.1.134 HTTP HTTPS telnet Detail
Blade 8 SURUGA-SLOT3 Green on Off Off Installed 192.168.1.135 HTTP HTTPS telnet Detail
Switch Module
Location Switch Module Name STATUS LED ID LED Presence IP address Detail
Copyright (C) 2006-2007 NEC Corporation. All Rights Reserved.
Done
Internet

When you click the [HTTP] or [HTTPS] buttons, the Web page of EXPRESSSCOPE Engine for the selected CPU blade opens in a separate window.

When you click the [telnet] link, the command line console of EXPRESSSCOPE Engine for the selected CPU blade opens in a separate window.

NOTES:

- For more information about the remote management feature of EXPRESSSCOPE Engine, refer to the "EXPRESSSCOPE Engine User's Guide."
- The telnet link feature may be disabled depending on the operating system of the management console or the Web browser. The telnet feature is available in Internet Explorer 6 and Mozilla FireFox 2.0.

When you click the [Detail] button, the detailed information on the selected CPU blade is displayed.

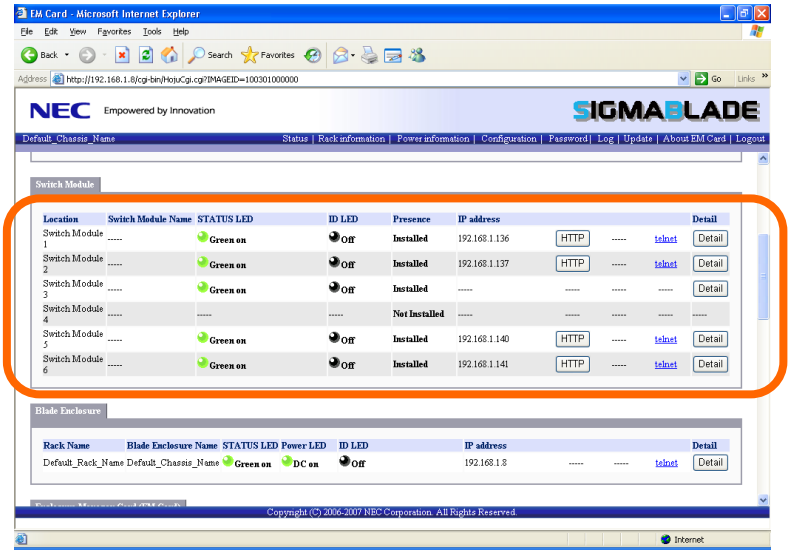
The detailed information on the CPU blade is described later in this chapter.

IMPORTANT: When the installed CPU blade occupies two slots (e.g., NEC Express5800/120Bb-m6), the slot to the right of the installed slot is indicated as "Not Installed."

Switch Modules

Switch modules are listed as shown in the figure below.

The installation location, switch module name, STATUS LED condition, ID LED condition, installation status, and IP address for management of the switch module are displayed from left to right. Next to these items are buttons to link with the management feature and to display detailed information.


EM Card - Microsoft Internet Explorer
NEC Empowered by Innovation
SIGMABLADE
Default_Chassis_Name
Status | Rack information | Power information | Configuration | Password | Log | Update | About EM Card | Logout
Switch Module
Location | Switch Module Name | STATUS LED | ID LED | Presence | IP address | Detail
Switch Module 1 ----- Green on Off Installed 192.168.1.136 HTTP ----- telnet Detail
Switch Module 2 ----- Green on Off Installed 192.168.1.137 HTTP ----- telnet Detail
Switch Module 3 ----- Green on Off Installed ----- ----- ----- ----- Detail
Switch Module 4 ----- ----- ----- Not Installed ----- ----- ----- ----- -----
Switch Module 5 ----- Green on Off Installed 192.168.1.140 HTTP ----- telnet Detail
Switch Module 6 ----- Green on Off Installed 192.168.1.141 HTTP ----- telnet Detail
Blade Enclosure
Rack Name | Blade Enclosure Name | STATUS LED | Power LED | ID LED | IP address | Detail
Default_Rack_Name Default_Chassis_Name Green on DC on Off 192.168.1.8 ----- ----- telnet Detail
Copyright (C) 2006-2007 NEC Corporation. All Rights Reserved.
Internet

When you click the [HTTP] button, the Web page of the management feature for the selected switch module opens in a separate window.

When you click the [telnet] link, the command line console for the selected switch module opens in a separate window.

NOTES:

- The [HTTP] button is not displayed if the management LAN interface of the switch module does not support the web feature. In addition, if the telnet feature is not supported, clicking the "telnet link" only opens another window. The command line console for the switch module is not displayed.
- For more information about the management feature of the switch module, refer to the User's Guide of the switch module.
- The telnet link feature may be disabled depending on the operating system of the management console or the Web browser. The telnet feature is available in Internet Explorer 6 and Mozilla FireFox 2.0.

IMPORTANT: When the installed switch module occupies two slots, the slot to the right of the installed slot is indicated as "Not Installed."

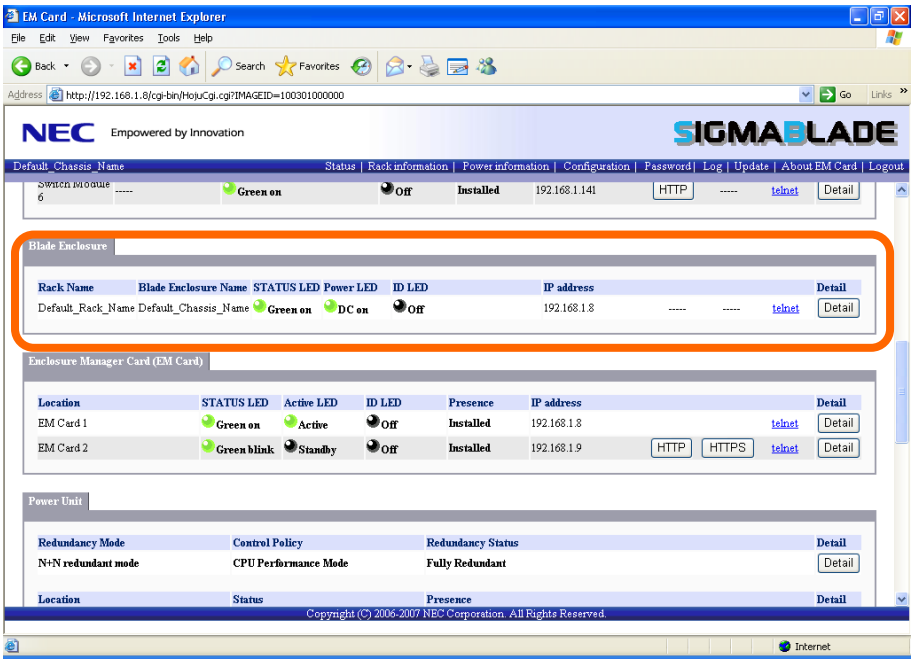
When you click the [Detail] button, the detailed information on the selected switch module is displayed.

The detailed information on the switch module is described later in this chapter.

Blade Enclosure

The Blade Enclosure is listed as shown in the figure below.

The rack name, Blade Enclosure name, STATUS LED condition, power LED condition, ID LED condition, and IP address of the active EM card are displayed from left to right. Next to these items are buttons to link with the command line console of the active EM card and to display detailed information.



When you click the [telnet] link, the command line console for the active EM card opens in a separate window.

> **NOTE:** The telnet link feature may be disabled depending on the operating system of the management console or the Web browser. The telnet feature is available in Internet Explorer 6 and Mozilla FireFox 2.0.

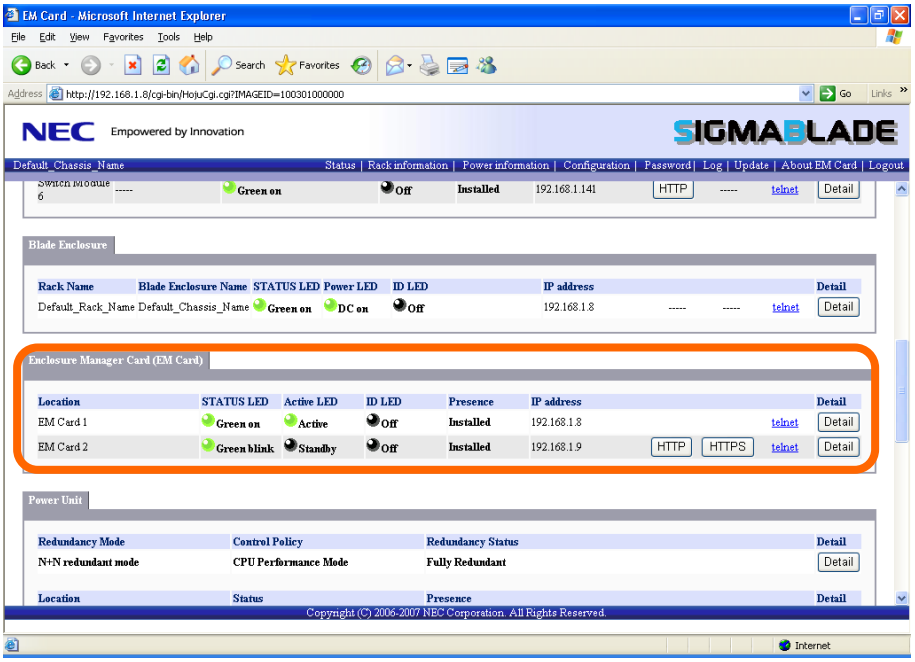
When you click the [Detail] button, the detailed information on the Blade Enclosure is displayed.

The detailed information on the Blade Enclosure is described later in this chapter.

EM Card

EM cards are listed as shown in the figure below.

The installed slot, STATUS LED condition, Active LED condition, ID LED condition, installation status, and floating IP address of EM cards are displayed from left to right. Next to these items are buttons to link with the Web console of another EM card (not connected) and to the command line console of each EM card and to display detailed information.


EM Card - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://192.168.1.8/cgi-bin/HojuCgi.cgi?IMAGEID=100301000000
Go Links
NEC Empowered by Innovation
SIGMABLADE
Default_Chassis_Name
Status | Rack information | Power information | Configuration | Password | Log | Update | About EM Card | Logout
Switch Module 6 ----- Green on Off Installed 192.168.1.141 HTTP ----- telnet Detail
Blade Enclosure
Rack Name Blade Enclosure Name STATUS LED Power LED ID LED IP address Detail
Default_Rack_Name Default_Chassis_Name Green on DC on Off 192.168.1.8 ----- ----- telnet Detail
Enclosure Manager Card (EM Card)
Location STATUS LED Active LED ID LED Presence IP address Detail
EM Card 1 Green on Active Off Installed 192.168.1.8 telnet Detail
EM Card 2 Green blink Standby Off Installed 192.168.1.9 HTTP HTTPS telnet Detail
Power Unit
Redundancy Mode Control Policy Redundancy Status Detail
N+N redundant mode CPU Performance Mode Fully Redundant Detail
Location Status Presence Detail
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Internet

When you click the [HTTP] or [HTTPS] buttons, the Web page of the selected EM card opens in a separate window.

When you click the [telnet] link, the command line console for the selected EM card opens in a separate window.

> **NOTE:** The telnet link feature may be disabled depending on the operating system of the management console or the Web browser. The telnet feature is available in Internet Explorer 6 and Mozilla FireFox 2.0.

When you click the [Detail] button, the detailed information on the selected EM card is displayed.

The detailed information on the EM card is described later in this chapter.

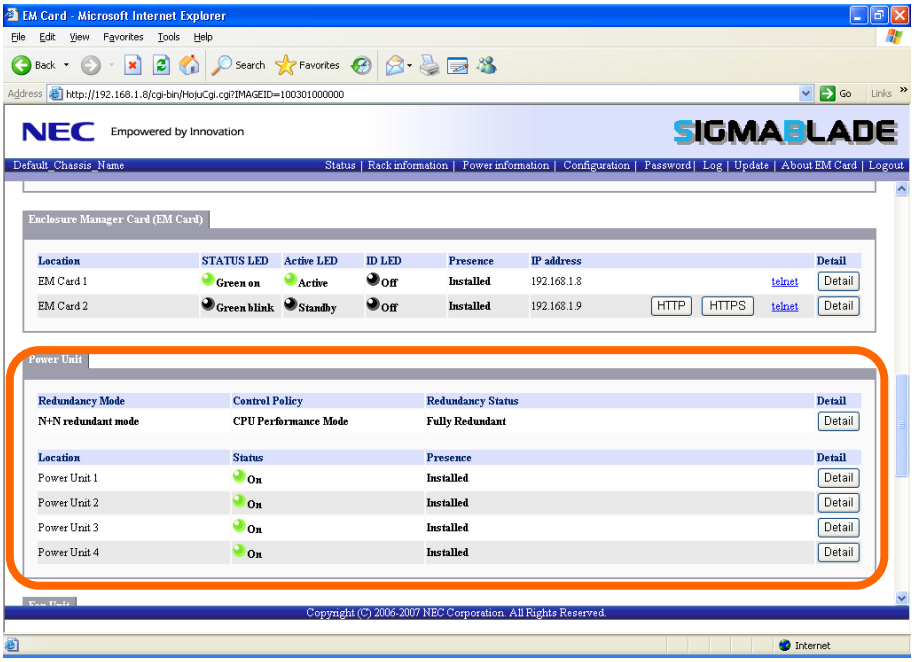
Power Unit

The list of power units appears as shown in the figure below.

The upper part indicates the information on power control in the system. The lower part lists the information on the power units.

The upper part indicates the power redundancy mode, power control policy, and power redundant status in the system from left to right. At the right end there is a button to display detailed information of the power system.

The lower part arranges the installation location, STATUS lamp condition, and installation states of the power units from left to right. At the right end there are buttons to display detailed information of the relevant power unit.


EM Card - Microsoft Internet Explorer
NEC Empowered by Innovation
SIGMABLADE
Default_Chassis_Name
Status | Rack information | Power information | Configuration | Password | Log | Update | About EM Card | Logout
Enclosure Manager Card (EM Card)
Location STATUS LED Active LED ID LED Presence IP address Detail
EM Card 1 Green on Active Off Installed 192.168.1.8 telnet Detail
EM Card 2 Green blink Standby Off Installed 192.168.1.9 HTTP HTTPS telnet Detail
Power Unit
Redundancy Mode Control Policy Redundancy Status Detail
N+N redundant mode CPU Performance Mode Fully Redundant Detail
Location Status Presence Detail
Power Unit 1 On Installed Detail
Power Unit 2 On Installed Detail
Power Unit 3 On Installed Detail
Power Unit 4 On Installed Detail
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When you click the [Detail] button of a power unit, the detailed information on the power unit appears.

The detailed information display of a power unit is described later.

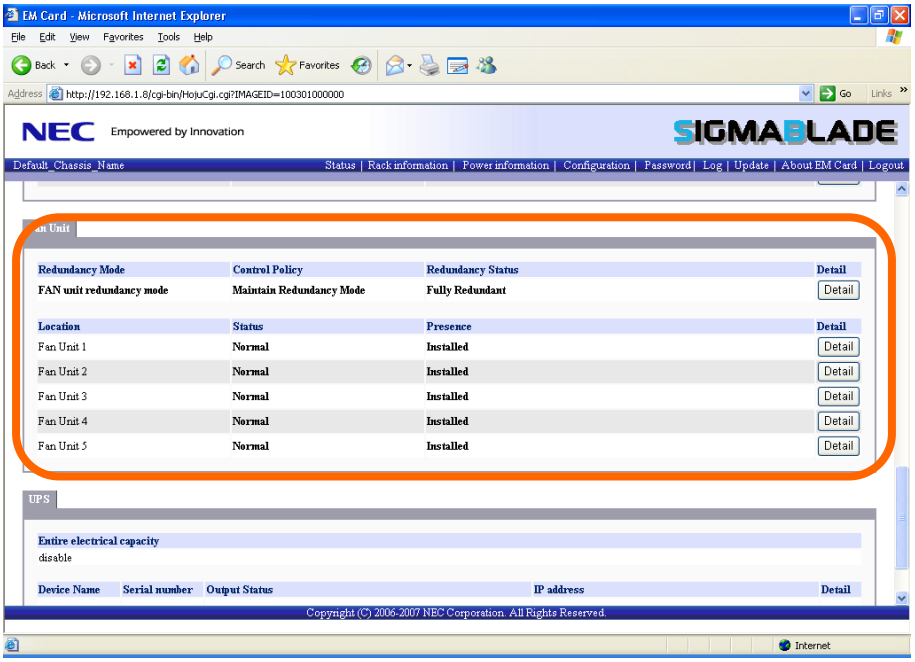
FAN Unit

The list of fan units appears as shown in the figure below.

The upper part indicates the information on fan control in the system. The lower part lists the information on the fan units.

The upper part arranges the fan redundant mode, fan control policy, and fan redundant status in the system from left to right. At the right end, there is a button to display detailed information of the fan system.

The lower part arranges the installation locations, status, and installation states of the fan units from left to right. At the right end, there are buttons to display detailed information of the relevant power unit.



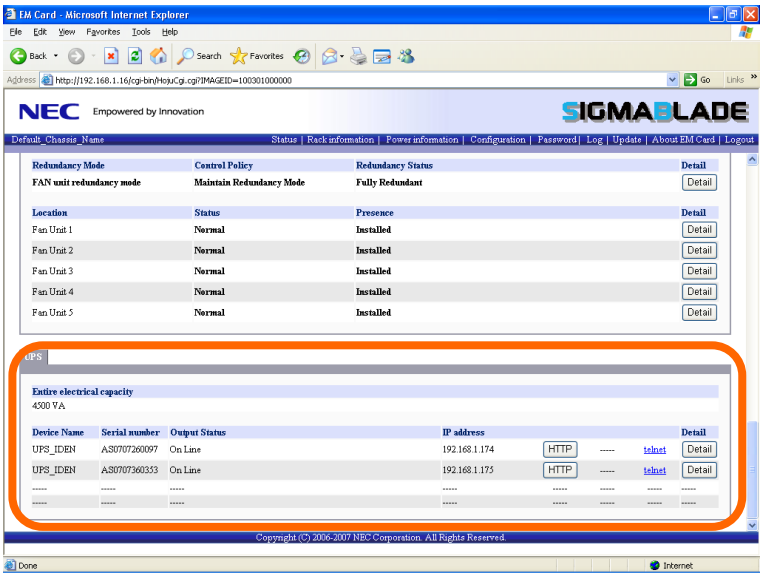
When you click the [Detail] button of a fan unit, the detailed information on the fan unit appears. The detailed information display of a fan unit is described later.

UPS

If the EM card provides UPS management, the list of the UPS's managed by the EM card appears as shown in the figure below.

The upper part indicates the entire electrical capacity supplied by the UPS's installed in the system. The lower part lists the information on the UPS's.

The lower part arranges the device names (UPS names), serial numbers, output status, and IP addresses of the UPS's from left to right. At the right end, there are buttons that link to the management features of the relevant UPS and that display detailed information of the UPS.



When you click the [HTTP] button of a UPS, the Web Console of the UPS opens in a separate window.

When you click the [telnet] link of a UPS, the command line console of the UPS opens in a separate window.

> **NOTE:** The telnet link feature may be disabled depending on the operating system of the management console or the Web browser. The telnet feature is available in Internet Explorer 6 and Mozilla FireFox 2.0.

When you click the [Detail] button of a UPS, the detailed information on the UPS appears. The detailed information display of a UPS is described later.

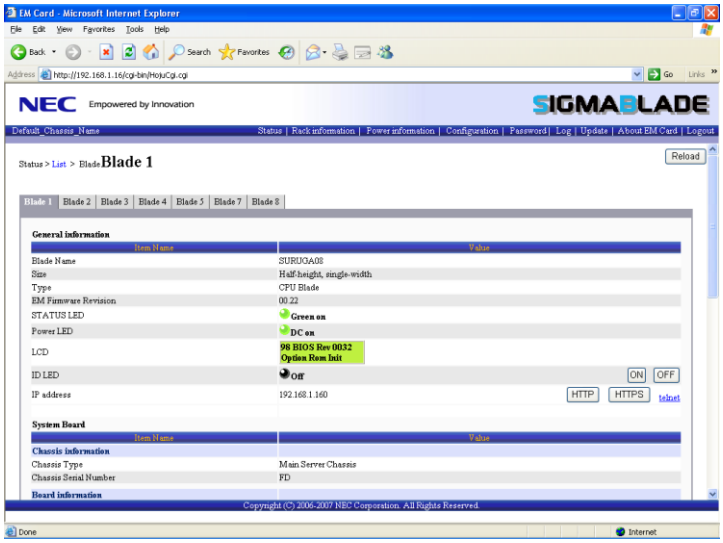
Detailed System Information

CPU Blade

When you click the [Detail] button on the [CPU Blade List] window, the following screen appears.

Each tab represents the installed slot.
Click the tab to switch to the CPU blade that you want to view the detailed information.

The displayed data consists of General Information, System Board, and Embedded Device information from top to bottom.



The general information includes the name, size, type, and firmware revision of the blade, the STATUS and Power LED states, the virtual LCD display, the ID LED state, and the IP address of the EXPRESSSCOPE Engine.

Click the [ON] or [OFF] button of the ID LED to operate the ID LED of the selected CPU blade.

When you click the [HTTP] or [HTTPS] button, the Web page of EXPRESSSCOPE Engine for the selected CPU blade opens in a separate window.

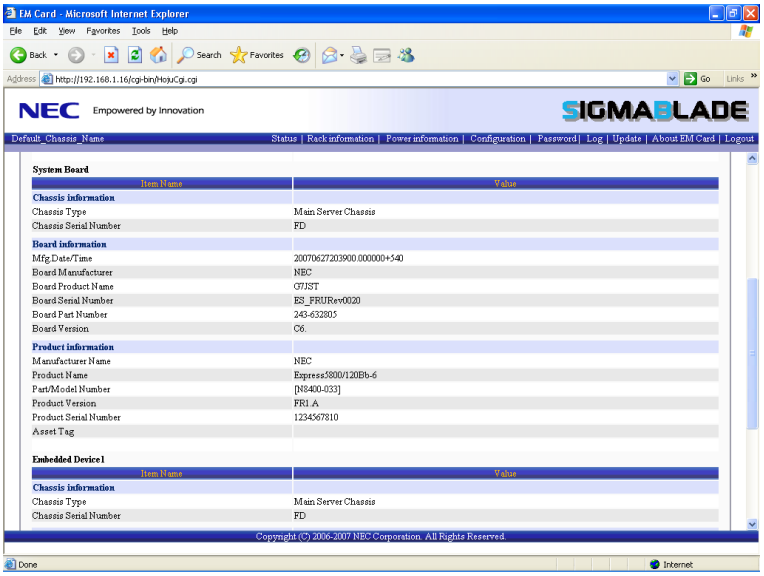
When you click the [telnet] link, the command line console of EXPRESSSCOPE Engine for the selected CPU blade opens in a separate window.

NOTES:

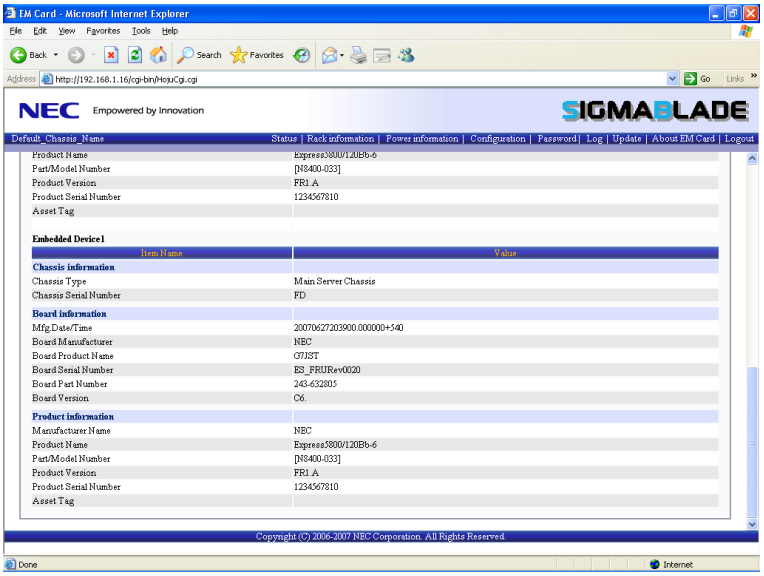
- For more information about EXPRESSSCOPE Engine, refer to the "EXPRESSSCOPE Engine User's Guide."
- The telnet link feature may be disabled depending on the operating system of the management console or the Web browser. The telnet feature is available in Internet Explorer 6 and Mozilla FireFox 2.0.

The System Board information includes the chassis, board, and product information.

The information is associated with the FRU's of the CPU blade.



The Mezzanine card information includes the board and product information. The information is associated with the FRU's of Mezzanine cards inserted in Mezzanine slots on the CPU blade.

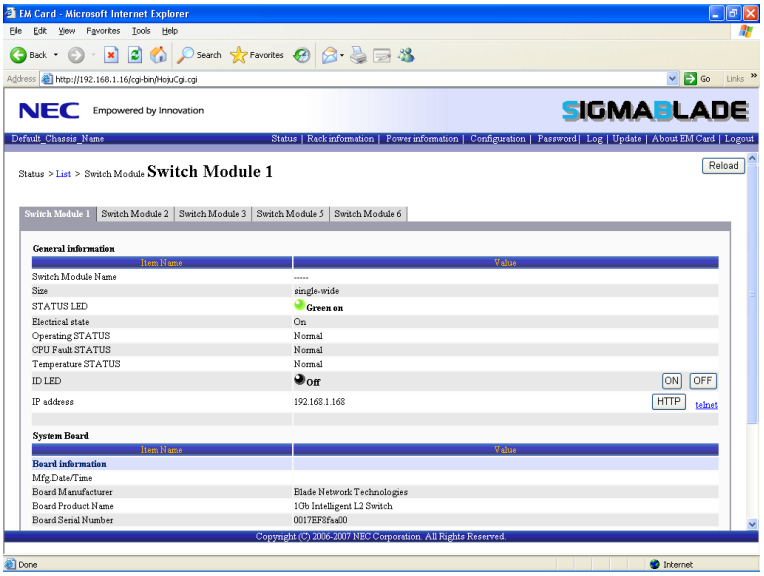


Switch Module

When you click the [Detail] button on the [Switch Module List] window, the following screen appears.

Each tab represents the installed slot.
Click the tab to switch to the switch module that you want to view the detailed information.

The displayed data consists of the general and device information from top to bottom.



The general information includes the name and size of the switch module, the STATUS LED, Electrical state, Operating status, CPU fault status, temperature status, ID LED status, and the IP address of the management feature of the switch module.

Click the [ON] or [OFF] button of the ID LED to operate the ID LED of the selected switch module.

When you click the [HTTP] button, the Web page for management of the selected switch module opens in a separate window.

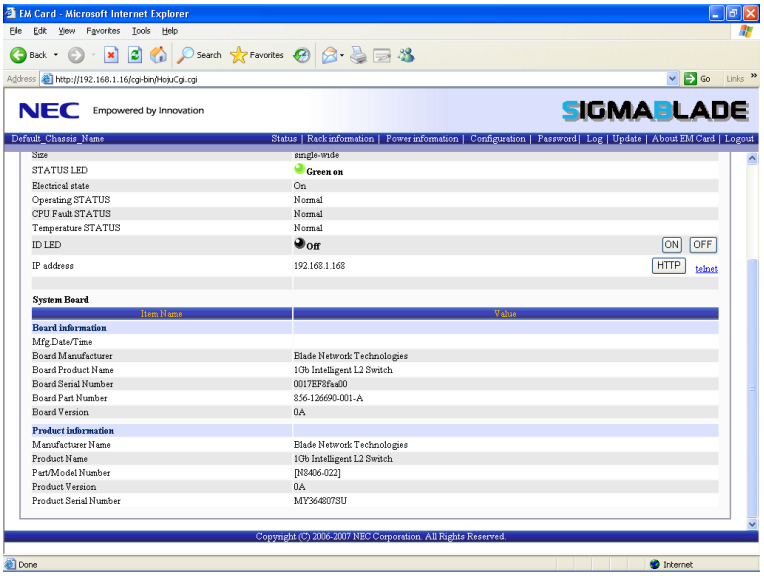
When you click the [telnet] link, the command line console for the selected switch module opens in a separate window.

NOTES:

- The [HTTP] button is not displayed if the management LAN interface of the switch module does not support the web feature. In addition, if the telnet feature is not supported, clicking the "telnet link" only opens another window. The command line console for the switch module is not displayed.
- For more information about the management feature of the switch module, refer to the User's Guide of the switch module.
- The telnet link feature may be disabled depending on the operating system of the management console or the Web browser. The telnet feature is available in Internet Explorer 6 and Mozilla FireFox 2.0.

The device information consists of the board and product information.

The information is associated with the FRU's of the relevant switch module.


EM Card - Microsoft Internet Explorer
NEC Empowered by Innovation
SIGMABLADE
Default_Chassis_Name
Status | Rack information | Power information | Configuration | Password | Log | Update | About EM Card | Logout
Size single-wide
STATUS LED Green on
Electrical state On
Operating STATUS Normal
CPU Fault STATUS Normal
Temperature STATUS Normal
ID LED Off
IP address 192.168.1.168
System Board
Item Name Value
Board information
Mfg Date/Time
Board Manufacturer Blade Network Technologies
Board Product Name 1Gb Intelligent L2 Switch
Board Serial Number 0017EF8faa00
Board Part Number 856-126690-001-A
Board Version 0A
Product information
Manufacturer Name Blade Network Technologies
Product Name 1Gb Intelligent L2 Switch
Part/Model Number [N8406-022]
Product Version 0A
Product Serial Number MY364807SU
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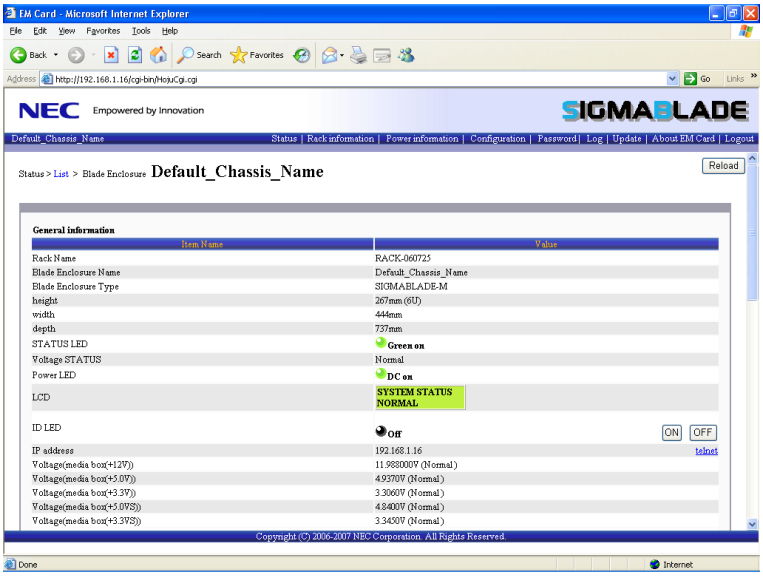
Done
Internet

Blade Enclosure

When you click the [Detail] button on the [Blade Enclosure List] window, the following screen appears.

The Blade Enclosure name is displayed in the title field.

The displayed data consists of the general information, device information on the midplane, media boxes, and connector boards from top to bottom.



The general information includes the rack name, the name, type, height, width, and depth of the Blade Enclosure, the STATUS LED, voltage status, power LED status, virtual LCD and ID LED states, the IP address of the active EM card, and the voltages on the media boxes.

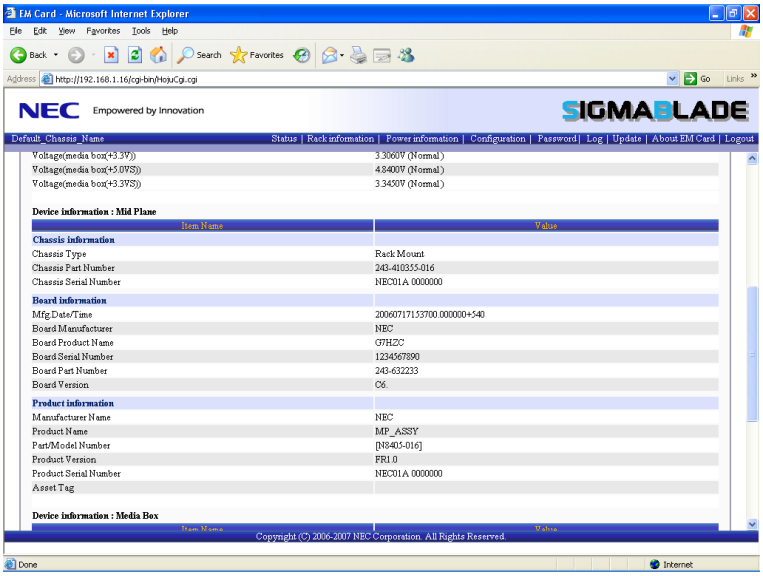
Click the [ON] or [OFF] button of the ID LED to operate the ID LED on the SIGMABLADE monitor.

When you click the [telnet] link, the command line console for the active EM card opens in a separate window.

> **NOTE:** The telnet link feature may be disabled depending on the operating system of the management console or the Web browser. The telnet feature is available in Internet Explorer 6 and Mozilla FireFox 2.0.

The device information on the midplane consists of the chassis, board, and product information.

The information is associated with the FRU's of the midplane in the relevant Blade Enclosure.


EM Card - Microsoft Internet Explorer
NEC Empowered by Innovation
SIGMABLADE
Default_Chassis_Name
Status | Rack information | Power information | Configuration | Password | Log | Update | About EM Card | Logout
Device information : Mid Plane
Chassis information
Board information
Product information
Device information : Media Box
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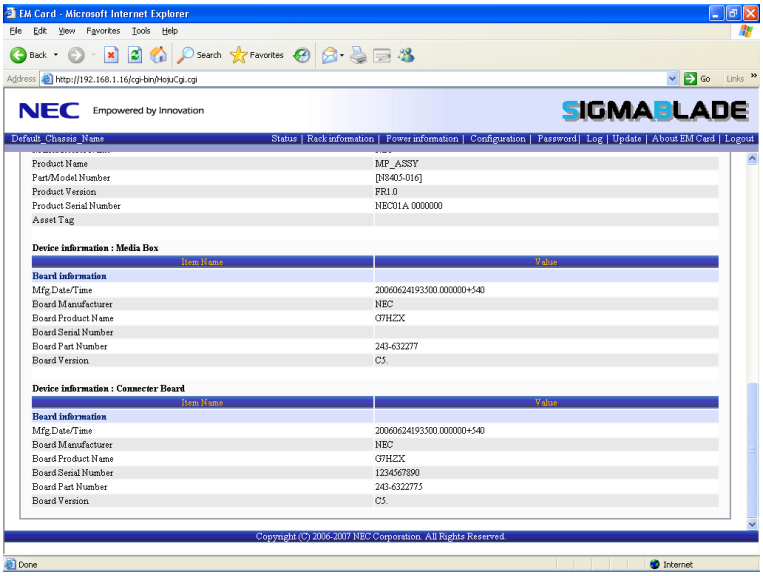
The device information on a media box or connector board includes its board information.

The information is associated with the FRU's of the media box or connector board in the relevant Blade Enclosure.


EM Card - Microsoft Internet Explorer
NEC Empowered by Innovation
SIGMABLADE
Default_Chassis_Name
Status | Rack information | Power information | Configuration | Password | Log | Update | About EM Card | Logout
Device information : Media Box
Device information : Connecter Board
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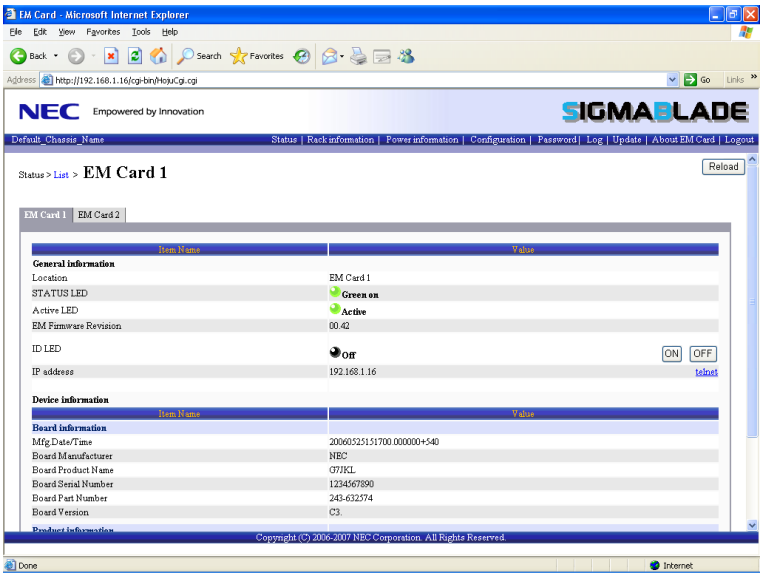
EM Card

When you click the [Detail] button on the [EM Card List] window, the following screen appears.

Click the tab to switch to the EM card that you want to view the detailed information.

The displayed information consists of the general and device information from top to bottom.



The general information includes the installation location of the EM card, the STATUS and Active LED status, the EM firmware revision, the ID LED status, and the floating IP address of the EM card.

Click the [ON] or [OFF] button of the ID LED to operate the ID LED of the selected EM card.

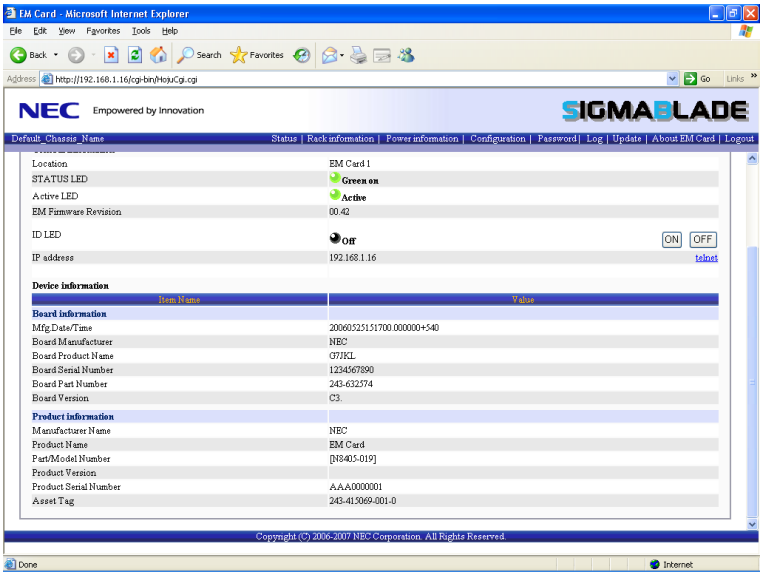
When you click the [HTTP] or [HTTPS] button, the Web page for the selected EM card opens in a separate window.

When you click the [telnet] link, the command line console for the selected EM card opens in a separate window.

> **NOTE:** The telnet link feature may be disabled depending on the operating system of the management console or the Web browser. The telnet feature is available in Internet Explorer 6 and Mozilla FireFox 2.0.

The device information includes the board and product information.

The information is associated with the FRU's of the EM card.

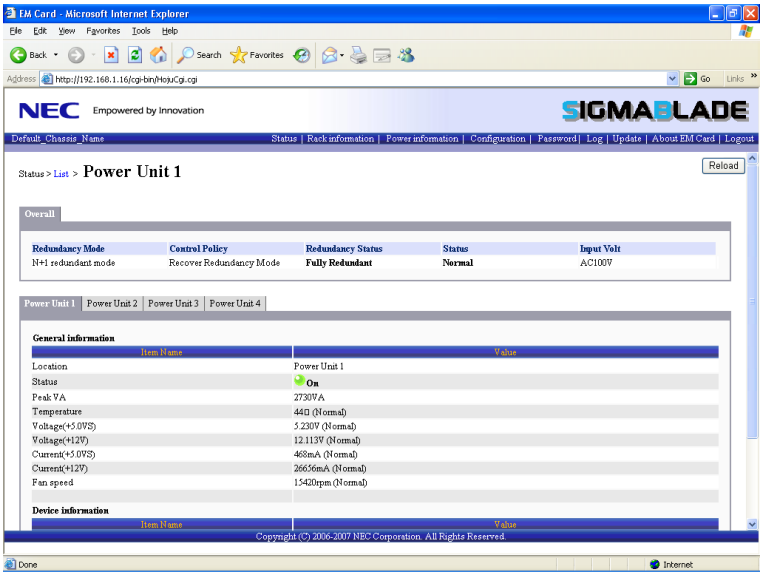


Power Units

When you click the [Detail] button of a power unit on the power unit list screen, the detailed information on the selected power unit appears as shown below.

The upper part indicates the information on power control in the entire system. The lower part consists of the general and device information on the power unit.

The tab of a power unit indicates the installation location of the power unit. When you click a tab, the detailed information on the selected power unit appears.

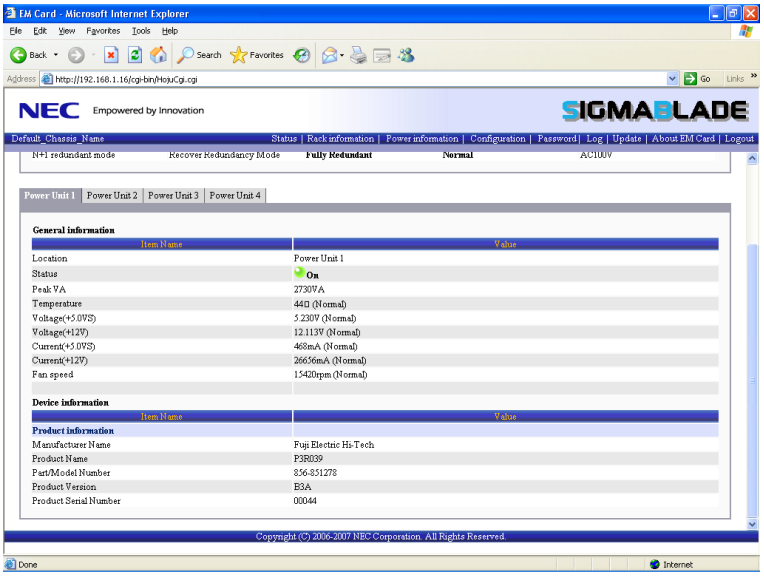


The upper part arranges the redundancy mode, control policy, redundancy status of the power unit, the overall power status, and the input voltage from left to right.

The general information in the lower part lists the installation location, power unit status, peak power, device temperature, supplied voltages, and the rotation rate of the fan in the power unit.

The device information includes the product information.

The information is associated with the FRU's of the power unit.

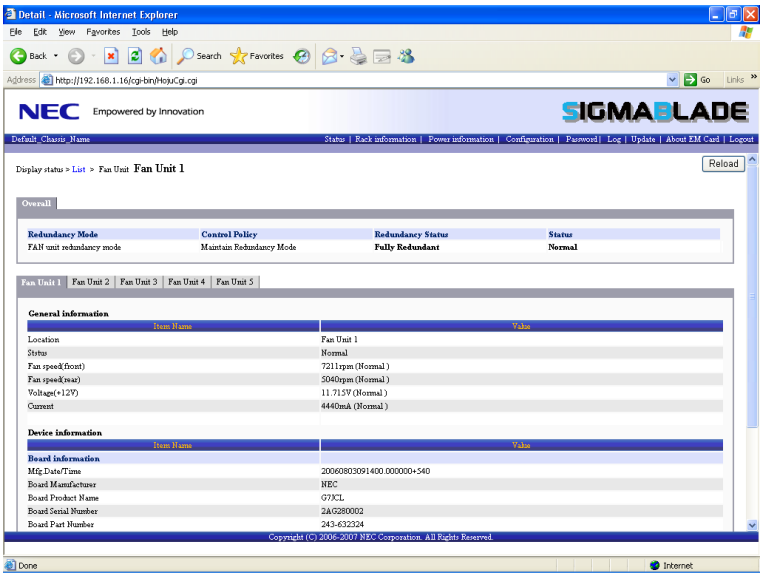


Fan Units

When you click the [Detail] button of a fan unit on the fan unit list screen, the detailed information on the selected fan unit appears as shown below.

The upper part indicates the information on fan control in the system. The lower part consists of the general and device information on the fan unit.

The tab of a fan unit indicates the installation location of the fan unit. When you click a tab, the detailed information on the selected fan unit appears.

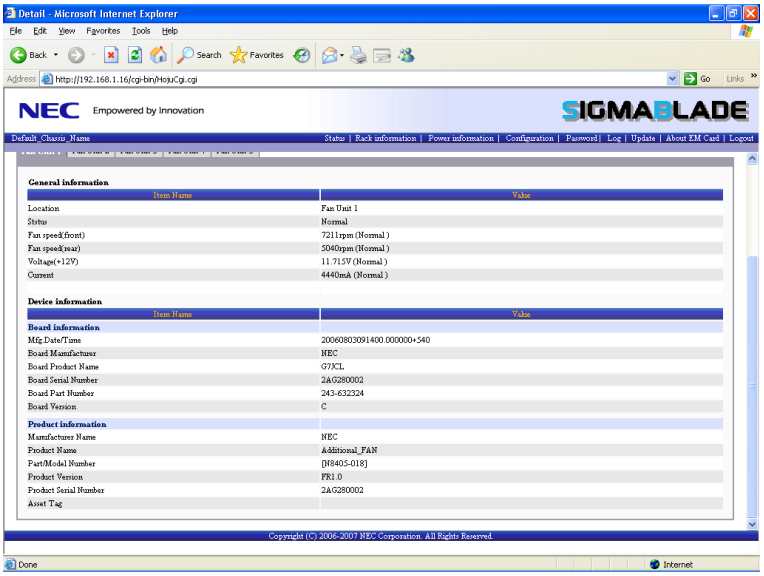


The upper part arranges the redundancy mode, control policy, redundancy status of the fan unit, and the overall fan status from left to right.

The general information in the lower part lists the installation location and status of the fan unit, the rotation speed of the front and rear fans, and the voltage and current supplied to the fan units.

The device information includes the board and product information.

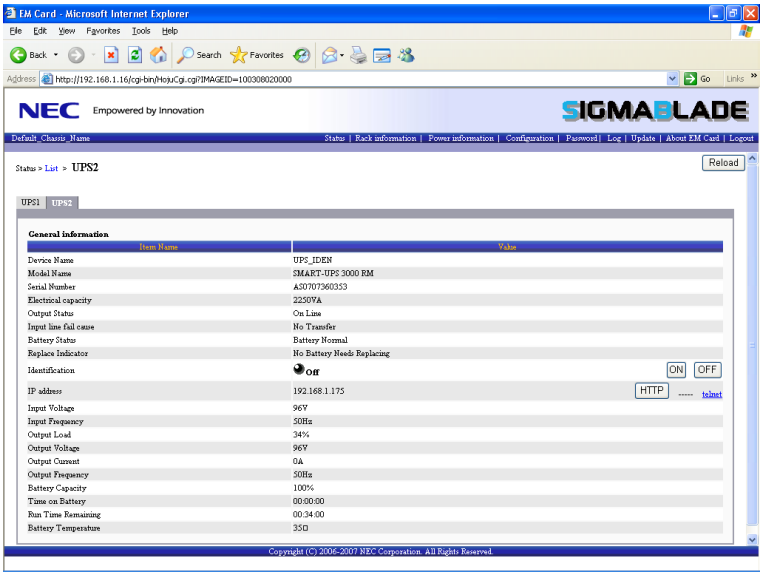
The information is associated with the FRU's of the fan unit.



UPS

When you click the [Detail] button of a UPS on the UPS list screen, the detailed information on the selected UPS appears as shown below.

When you click a tab, the detailed information on the selected UPS appears.



The displayed data consists of device name (UPS name), model name, serial number, electrical capacity, output status, input line fail cause, battery status, indicator for battery replacement, identification state, IP address of UPS, input voltage, input frequency, output load, output voltage, output current, output frequency, remaining battery capacity, time on battery, run time remaining, and in-battery temperature from top to bottom.

Click the [ON] or [OFF] button of the Identify state to turn the LED on the front panel of the UPS on or off.

> **NOTE:** When the Web console of the UPS is open or the command line console of the UPS is connected, the detailed information screen is not available.

When you click the [HTTP] button, the Web console of the UPS opens in a separate window.

When you click the [telnet] link, the command line console of the UPS opens in a separate window.

NOTES:

- For more information on the web page and command line console of the UPS, refer to the User's Guide of the UPS.
- The telnet link feature may be disabled depending on the operating system of the management console or the Web browser. The telnet feature is available in Internet Explorer 6 and Mozilla FireFox 2.0.

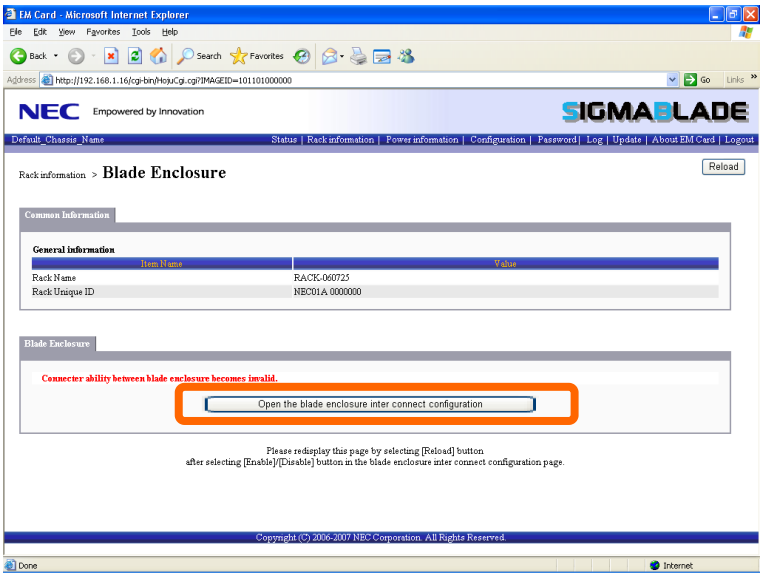
Rack Information

The EM cards in the Blade Enclosures can share the rack information via the Blade Enclosure inter connect.

> **NOTE:** The Blade Enclosure inter connect is disabled by default. To use the Blade Enclosure inter connect, connect the connectors on the rear faces of the Blade Enclosures with LAN cables (straight), and then enable the Blade Enclosure inter connect.

Enabling Blade Enclosure Inter Connect

When you click [Rack Information] on the menu bar, the window shown below appears:


EM Card - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://192.168.1.16/cgi-bin/HojuCgi.cgi?IMAGEID=101101000000
Go Links
NEC Empowered by Innovation
SIGMABLADE
Default_Chassis_Name
Status | Rack information | Power information | Configuration | Password | Log | Update | About EM Card | Logout
Rack information > Blade Enclosure
Reload
Common Information
General information
Item Name
Value
Rack Name
RACK-060725
Rack Unique ID
NEC01A 0000000
Blade Enclosure
Connecter ability between blade enclosure becomes invalid.
Open the blade enclosure inter connect configuration
Please redisplay this page by selecting [Reload] button
after selecting [Enable]/[Disable] button in the blade enclosure inter connect configuration page.
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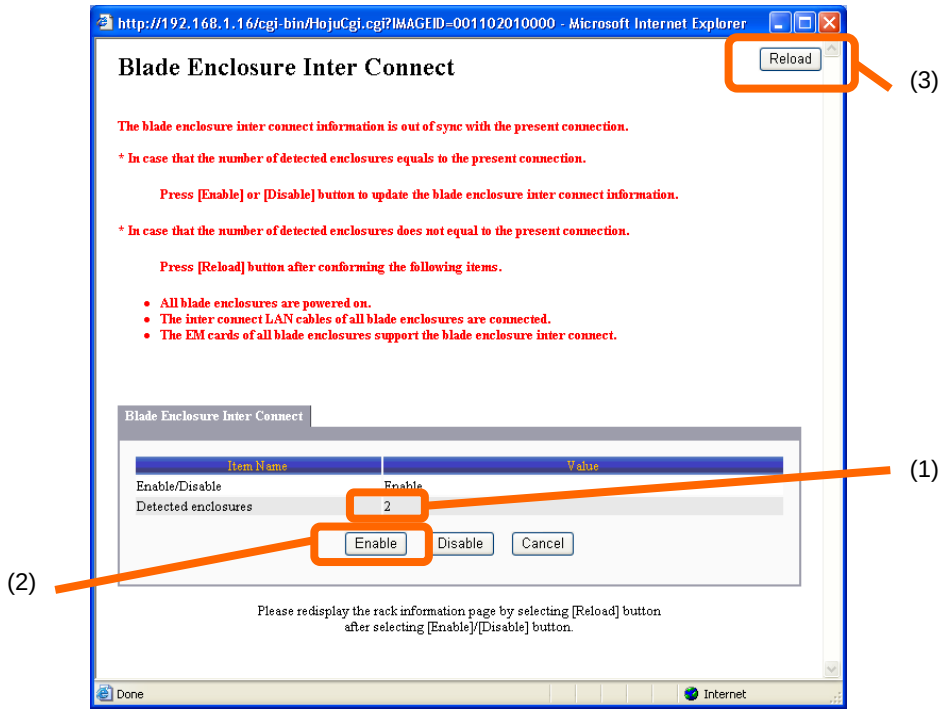
Done
Internet

When you click [Open the blade enclosure inter connect configuration] at the bottom of the screen, the window shown below appears:


http://192.168.1.16/cgi-bin/HojuCgi.cgi?IMAGEID=001102010000 - Microsoft Internet Explorer
Blade Enclosure Inter Connect
Reload
(3)
The blade enclosure inter connect information is out of sync with the present connection.
* In case that the number of detected enclosures equals to the present connection.
Press [Enable] or [Disable] button to update the blade enclosure inter connect information.
* In case that the number of detected enclosures does not equal to the present connection.
Press [Reload] button after conforming the following items.
All blade enclosures are powered on.
The inter connect LAN cables of all blade enclosures are connected.
The EM cards of all blade enclosures support the blade enclosure inter connect.
Blade Enclosure Inter Connect
Item Name
Value
Enable/Disable
Enable
Detected enclosures
2
(1)
(2)
Enable
Disable
Cancel
Please redisplay the rack information page by selecting [Reload] button after selecting [Enable]/[Disable] button.
Done
Internet

Check the [Detected enclosures] (1) on the above screen.

If the number of detected Blade Enclosures matches the number of connected Blade Enclosures , click the [Enable] button (2) on the above screen.

The EM cards in the Blace Enclosures start sharing information.

When information sharing is successful, the information on each Blade Enclosure appears in the Blade Enclosure list.

If the number of detected Blade Enclosures does not match the number of connected Blade Enclosures, check the following and then click the [Reload] button (3) on the above screen:

- Check that the power of every Blade Enclosure is turned on.
- Check that all LAN cables (straight) for the Blade Enclosure inter connect are connected properly.
- Check that the EM card in every Blade Enclosure supports the Blade Enclosure inter connect.

IMPORTANT:

- To change cable connections for the Blade Enclosure inter connect(*), first disable the Blade Enclosure inter connect. Then, change the cable connections and enable it again.
  If cable connections for the Blade Enclosure inter connect are changed without disabling it, click the [Enable] or [Disable] button to update the Blade Enclosure inter connect information to match the current connection status.

  (*) Change the connections of the LAN cables for the Blade Enclosure inter connect when adding or removing Blade Enclodures or changing their positions in the rack.

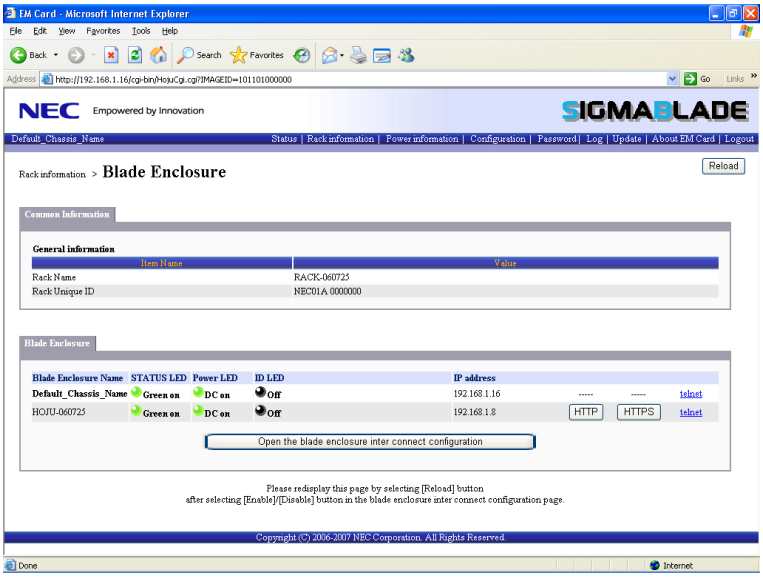
- If an EM card is replaced without EM card duplication, the Blade Enclosure inter connect information saved in the EM card is lost. In this case, click the [Enable] or [Disable] button to update the Blade Enclosure inter connect information saved in the EM cards to match the current connection status.

NOTE: EM Card N8405-019A is required to use the Blade Enclosure inter connect. EM card N8405-019 does not support the Blade Enclosure inter connect.

Displaying Rack Information

When you click [Rack Information] on the menu bar with the Blade Enclosure inter connect enabled, the rack information shared through the Blade Enclosure inter connect appears.

The displayed data consists of the rack name and its unique ID in the General Information part at the top, and Blade Enclosure names, STATUS, POWER and ID LED's, and IP addresses of EM cards in the Blade Enclosure list part at the bottom.



When you click the [HTTP] or [HTTPS] button, the Web console of the active EM card in the Blade Enclosure opens in a separate window.

When you click the [telnet] link, the command line console for the active EM card on the Blade Enclosure opens in a separate window.

NOTES:

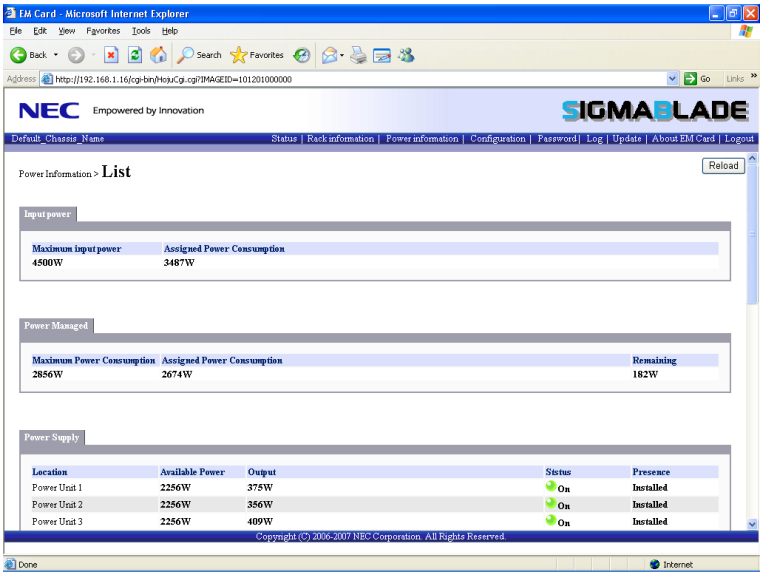
- If the same login password is set on the EM cards installed in each of the Blade Enclosures connected with the Blade Enclosure inter connect, clicking the [HTTP] or [HTTPS] button allows the Web console for the EM card to open without entering a password. When the login passwords vary on the EM cards, the login screen opens.
- The telnet link feature may be disabled depending on the operating system of the management console or the Web browser. The telnet feature is available in Internet Explorer 6 and Mozilla FireFox 2.0.

To disable the Blade Enclosure inter connect, click the [Open the blade enclosure inter connect configuration] button at the bottom of the screen. Clicking [Disable] at the lower part on the Blade Enclosure inter connect setting screen disables the Blade Enclosure inter connect for all the connected Blace Enclosures.

IMPORTANT: If you select [Enable] or [Disable] on the Blade Enclosure inter connect setting screen, then the previous screen (Rack Information) appears again. However, the Rack Information screen does not update the information automatically. Click the [Reload] button at the upper right corner to display the latest information.
However, if you click the [Reload] button just after the previous screen (Rack Information) is redisplayed by selecting [Enable]/[Disable], all the information may not always be displayed (because it takes some time to collect information from other chassis). If so, wait a moment and click the [Reload] button again.

Power Information

When you click [Power Information] on the menu bar, the information on the power of the Blade Enclosures managed by the EM cards appears.

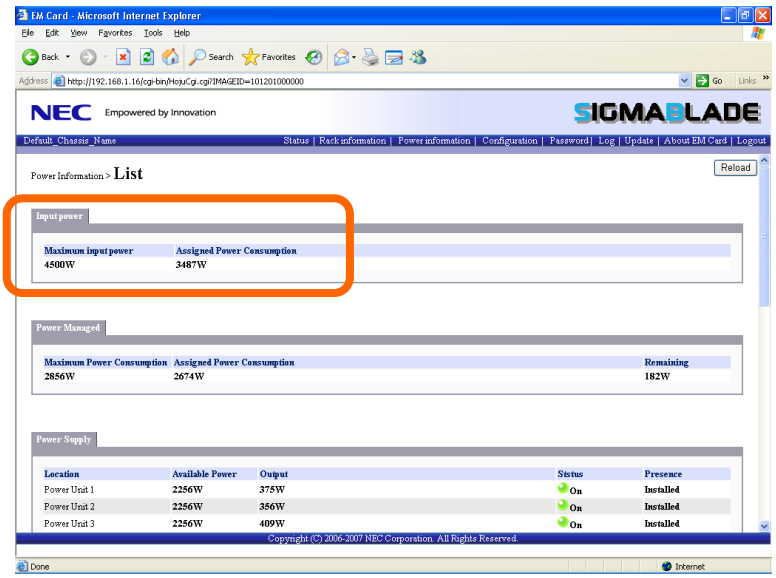


- Input power
  Indicates the input power required for all components in the Blade Enclosure as a system.
- Power Managed
  Indicates the power consumption of all components in the Blade Enclosure managed by the EM card.
- Power Supply
  Indicates the output power of the power units installed in the Blade Enclosure.
- Blade
  Indicates the power consumption of the CPU blades installed in the Blade Enclosure.
- Switch Module
  Indicates the power consumption of the switch modules installed in the Blade Enclosure.
- Fan Unit
  Indicates the power consumption of the fan units installed in the Blade Enclosure.

NOTE: Clicking the [Reload] button on the upper right corner allows the information on the screen to be updated with the latest information.

Input Power

Indicates the input power required for all components in the Blade Enclosure as a system.



Maximum Input Power

Indicates the input power in watts required when the system operates with the maximum allowable power consumption. The EM card manages the power consumption in the system to be equal or less than the maximum power consumption specified.

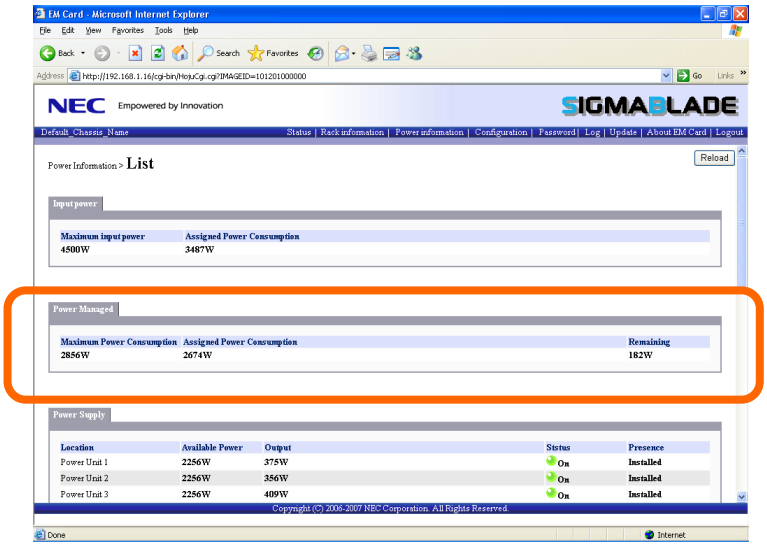
> **NOTE:** When the "Upper limit of the input power" is specified in [Power Management] on the Configuration screen or determined by the EM card based on the supply capacity of the UPS, only the smaller value is displayed. If no limit is imposed, "-----" is displayed.

Assigned Power Consumption

Indicates the input power required when the system operates with the power consumption in watts.

Power Managed

Indicates the power consumption of all components in the Blade Enclosure managed by the EM card.



Maximum Power Consumption

Indicates the maximum power consumption allowed for the system. The value is calculated based on the maximum input power described in the previous item and taking the power efficiency into account.

Assigned Power Consumption

Indicates the power assigned to all components in the Blade Enclosure.

Remaining

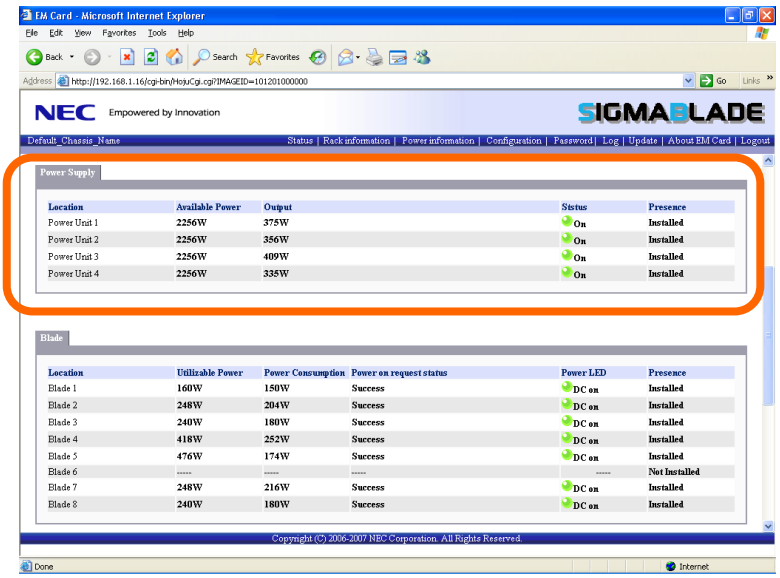
Indicates the power unassigned to any components.

NOTES:

- The following equation is satisfied:
  (Maximum power consumption)=(assigned power)+(remaining power)
- If the value specified for "Upper limit of the input power" is lower than that of the assigned power consumption while the power for the CPU blade and switch modules is used, the remaining power is represented as a negative value. If you power off the CPU blade and then try to power on, it is denied due to "Insufficient power." See "Configuration" described later for more information on how to specify the "Upper limit of the input power."

Power Supply

Indicates the output power of the power units installed in the Blade Enclosure.


EM Card - Microsoft Internet Explorer
NEC
Empowered by Innovation
SIGMABLADE
Default_Chassis_Name
Status | Rack information | Power information | Configuration | Password | Log | Update | About EM Card | Logout
Power Supply
Location | Available Power | Output | Status | Presence
Power Unit 1 | 2256W | 375W | On | Installed
Power Unit 2 | 2256W | 356W | On | Installed
Power Unit 3 | 2256W | 409W | On | Installed
Power Unit 4 | 2256W | 335W | On | Installed
Blade
Location | Utilizable Power | Power Consumption | Power on request status | Power LED | Presence
Blade 1 | 160W | 150W | Success | DC on | Installed
Blade 2 | 248W | 204W | Success | DC on | Installed
Blade 3 | 240W | 180W | Success | DC on | Installed
Blade 4 | 418W | 252W | Success | DC on | Installed
Blade 5 | 476W | 174W | Success | DC on | Installed
Blade 6 | ----- | ----- | ----- | ----- | Not Installed
Blade 7 | 248W | 216W | Success | DC on | Installed
Blade 8 | 240W | 180W | Success | DC on | Installed
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Done
Internet

Available Power

Indicates the maximum output power of a single power unit.

NOTES:

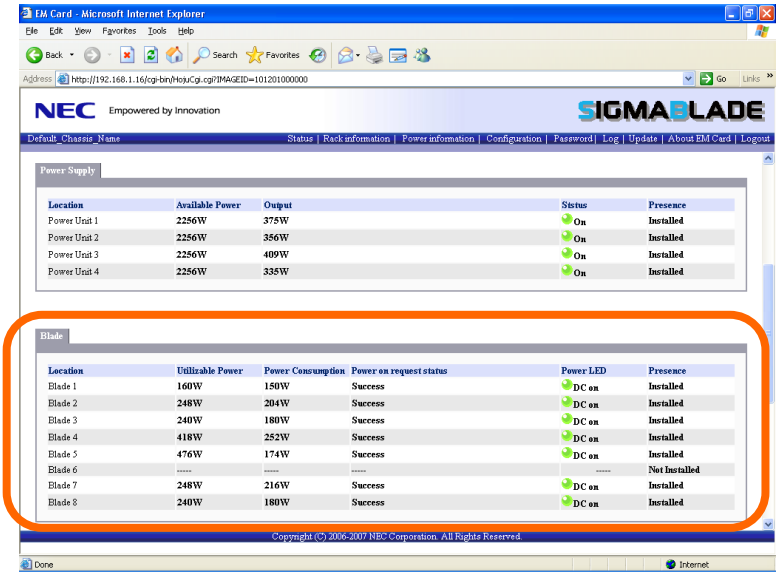
- When more than one power unit is installed in a Blade Enclosure, the output efficiency of each of the subsequent power units decreases. Therefore, the sum of the available power of all the power units installed in the Blade Enclosure is larger than the "maximum power consumption" in the management power column.
- The displayed value is associated with the FRU's of the power unit. The actual available power of N8405-039 PSU is approximately half of the displayed value since N8405-039 is used with 100 VAC input.

Output

Indicates the power that the power units output.

Blade

Indicates the power consumption of the CPU blades installed in the Blade Enclosure.


EM Card - Microsoft Internet Explorer
NEC Empowered by Innovation
SIGMABLADE
Default_Chassis_Name
Status | Rack information | Power information | Configuration | Password | Log | Update | About EM Card | Logout
Power Supply
Location | Available Power | Output | Status | Presence
Power Unit 1 | 2256W | 375W | On | Installed
Power Unit 2 | 2256W | 356W | On | Installed
Power Unit 3 | 2256W | 409W | On | Installed
Power Unit 4 | 2256W | 335W | On | Installed
Blade
Location | Utilizable Power | Power Consumption | Power on request status | Power LED | Presence
Blade 1 | 160W | 150W | Success | DC on | Installed
Blade 2 | 248W | 204W | Success | DC on | Installed
Blade 3 | 240W | 180W | Success | DC on | Installed
Blade 4 | 418W | 252W | Success | DC on | Installed
Blade 5 | 476W | 174W | Success | DC on | Installed
Blade 6 | ----- | ----- | ----- | ----- | Not Installed
Blade 7 | 248W | 216W | Success | DC on | Installed
Blade 8 | 240W | 180W | Success | DC on | Installed
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Utilizable Power

Indicates the available power for the CPU blades.

> **NOTE:** The Utilizable Power may vary in the following cases:
> – Before and after booting the operating system
> – Before and after updating the BIOS

Power Consumption

Indicates the current power consumption of the CPU blades.

> **NOTES:**
>
> - The "Utilizable Power" may exceed the "Power Consumption." However, it is not a problem if it only occurs temporarily.
> - The "Power Consumption" may be much lower than the "Utilizable Power" depending on the CPU load status.

Power On Request Status

Indicates the responses from the EM card when a CPU blade issues a power request to the EM card. Any of the following values appears:

- Success:

  The power is granted as requested.

- Success (power saving):

  The power is granted with a value smaller than the request.

- Power not enough:

  The minimum power request cannot be granted and the power of the CPU blade cannot be turned on.

- Cooling capacity not enough:

  The Blade Enclosure does not have sufficient cooling capacity and the power of the CPU blade cannot be turned on.

- Installation location error:

  Because the positional relationship between the CPU blade and fan units is incorrect, the power of the CPU blade cannot be turned on.

- E-Keying error:

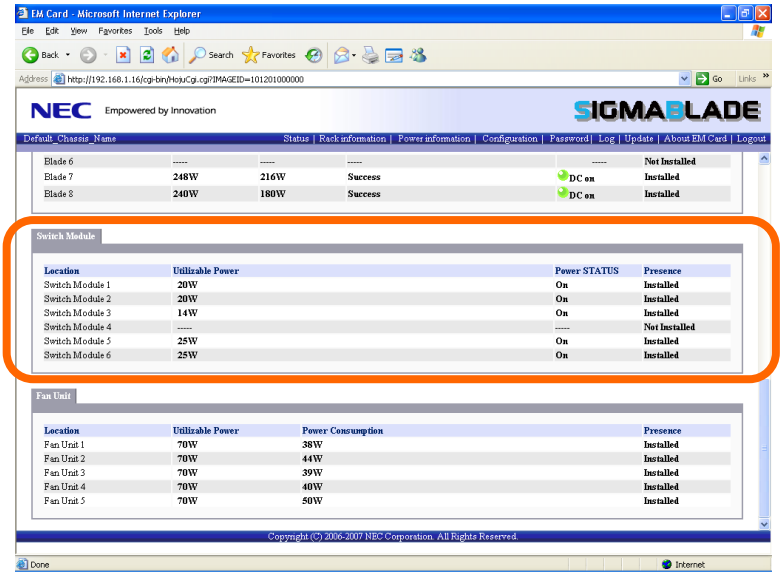
  Because the relationship between the IO port on the CPU blade and the corresponding switch modules is incorrect, the power of the CPU blade cannot be turned on.

- Processing:

  The request is being processed.

Switch Module

Indicates the power consumption of the switch modules installed in the Blade Enclosure.


EM Card - Microsoft Internet Explorer
NEC
Empowered by Innovation
SIGMABLADE
Default_Chassis_Name
Status | Rack information | Power information | Configuration | Password | Log | Update | About EM Card | Logout
Blade 6 ----- ----- ----- ----- Not Installed
Blade 7 248W 216W Success DC on Installed
Blade 8 240W 180W Success DC on Installed
Switch Module
Location Utilizable Power Power STATUS Presence
Switch Module 1 20W On Installed
Switch Module 2 20W On Installed
Switch Module 3 14W On Installed
Switch Module 4 ----- ----- Not Installed
Switch Module 5 25W On Installed
Switch Module 6 25W On Installed
Fan Unit
Location Utilizable Power Power Consumption Presence
Fan Unit 1 70W 38W Installed
Fan Unit 2 70W 44W Installed
Fan Unit 3 70W 39W Installed
Fan Unit 4 70W 40W Installed
Fan Unit 5 70W 50W Installed
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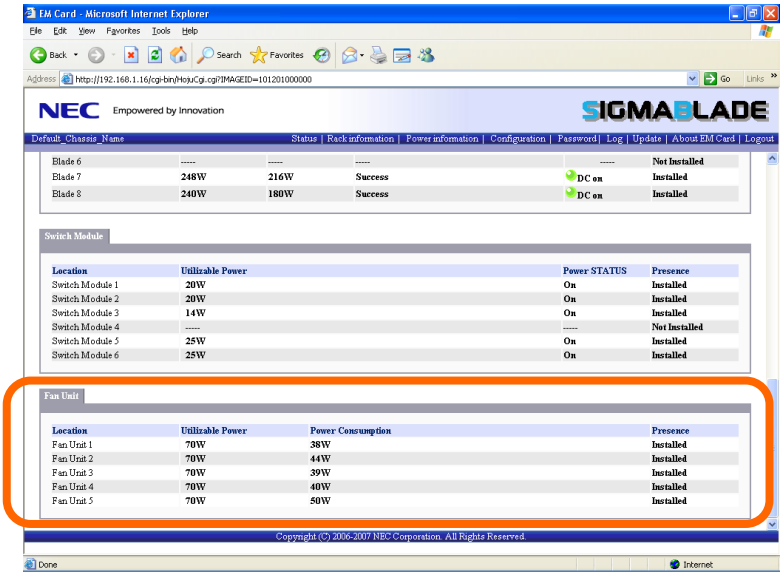
Utilizable Power

Indicates the available power for the switch modules.

Fan Unit

Indicates the power consumption of the fan units installed in the Blade Enclosure.


EM Card - Microsoft Internet Explorer
NEC
Empowered by Innovation
SIGMABLADE
Default_Chassis_Name
Status | Rack information | Power information | Configuration | Password | Log | Update | About EM Card | Logout
Blade 6 ----- ----- ----- ----- Not Installed
Blade 7 248W 216W Success DC on Installed
Blade 8 240W 180W Success DC on Installed
Switch Module
Location Utilizable Power Power STATUS Presence
Switch Module 1 20W On Installed
Switch Module 2 20W On Installed
Switch Module 3 14W On Installed
Switch Module 4 ----- ----- Not Installed
Switch Module 5 25W On Installed
Switch Module 6 25W On Installed
Fan Unit
Location Utilizable Power Power Consumption Presence
Fan Unit 1 70W 38W Installed
Fan Unit 2 70W 44W Installed
Fan Unit 3 70W 39W Installed
Fan Unit 4 70W 40W Installed
Fan Unit 5 70W 50W Installed
Copyright (C) 2006-2007 NEC Corporation. All Rights Reserved.
Done
Internet

Utilizable Power

Indicates the available power for the fan units.

Power Consumption

Indicates the current power consumption of the fan units.

Configuration

When you click [Configuration] on the menu bar, a window to view or edit the configuration information of the EM card appears.

You can use this page to create a backup of the configuration file and to restore it.

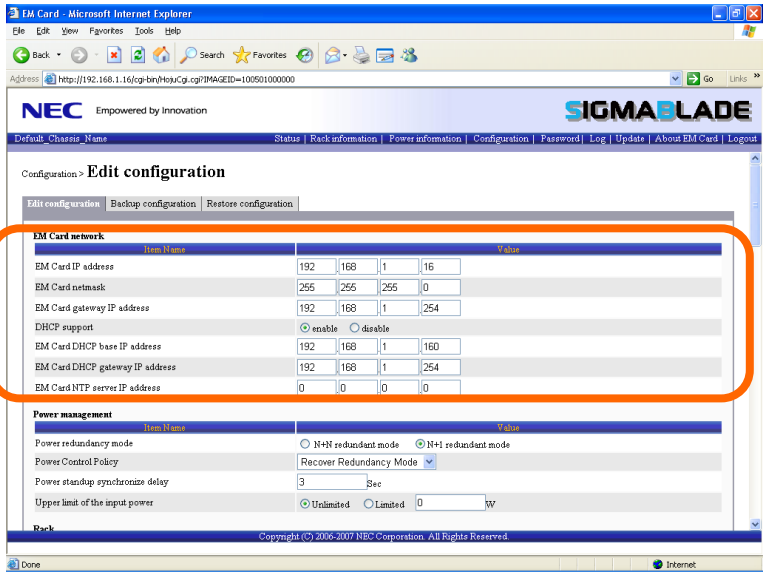
> **NOTE:** For more information about the configuration file, see Chapter 3.

Edit Configuration

The EM card must be configured by using the dedicated configuration file. On this page, you can edit the configuration file and apply it to the EM card.

EM Card Network

Use this page to specify the IP address, netmask, gateway IP address, DHCP base IP address, DHCP gateway IP address, and NTP server IP address of the EM card.



- EM Card IP address:
  Specify the IP address of the EM card.
- EM Card netmask:
  Specify the subnet mask of the EM card.

- EM Card gateway IP address:
  Specify the default gateway.

  Two EM cards installed in a Blade Enclosure use four IP addresses in total.

  These addresses are classified into two types: "Fixed IP" is determined by the slot where the EM card is installed, and "Floating IP" is used by the active or standby EM card regardless of the installation slot.

  The last bit of "Fixed IP" corresponds to the installation slot.

  The last bit of "Floating IP" is defined as "0" for the active EM card and "1" for the standby EM card.

IMPORTANT: If only one EM card is installed, four IP addresses are reserved for it. Make sure that these IP addresses do not overlap with the IP addresses of other devices.

NOTES:

- The IP address of the EM card is classified by the last two bits as shown below:

  00b: "Floating IP" that an active EM uses.
  01b: "Floating IP" that a standby EM uses.
  10b: "Fixed IP" of EM card installed in slot #1.
  11b: "Fixed IP" of EM card installed in slot #2.

  Default settings are shown below:

  "Floating IP" of active EM: 192.168.1.8/24
  "Floating IP" of standby EM: 192.168.1.9/24
  "Fixed IP" of EM card in slot #1: 192.168.1.10/24
  "Fixed IP" of EM card in slot #2: 192.168.1.11/24

- Did you specify a multiple of 4 for the last digit of <IP Address> of EM card? If not, the EM card defines the last two bits as "00b."

■ DHCP support

Specify whether the IP addresses of management I/F of CPU blades and switch modules are automatically assigned by the DHCP server of the EM card. The default setting is [Use].

NOTES:

- To have the EM card provide UPS management, select [Use] for the DHCP server of the EM card.
- When the DHCP server of the EM card is not used, the DHCP base, DHCP gateway, and NTP server IP addresses described later remain in the configuration file. However, the system does not refer to these values.

■ EM card DHCP base IP address:

Specify the base address of the management I/F. (The subnet mask can be the value specified as [EM Card netmask] above.)

■ EM card DHCP gateway IP address:

Specify the IP address of the default gateway.

IP addresses assigned by the DHCP server of the EM card are shown below:

– CPU blade installed in slot #1: Base address +0
– CPU blade installed in slot #2: Base address +1
– CPU blade installed in slot #3: Base address +2
:
– CPU blade installed in slot #8: Base address +7
– Switch module installed in slot #1: Base address +8
– Switch module installed in slot #2: Base address +9
:
– Switch module installed in slot #6: Base address +13
– UPS1 to UPS4: Base address +14 to Base address +17

IMPORTANT:

- The IP addresses for the management I/F of the CPU blade/switch module/UPS are assigned based on the "base address." The consecutive addresses ranging from the "base address" to "base address + 23" must not be assigned to other devices.
- When the DHCP server of the EM card is not used, the IP addresses are released.

NOTES:

- Check that the "base address" is set so that its subnet mask is the same as that of the EM card.

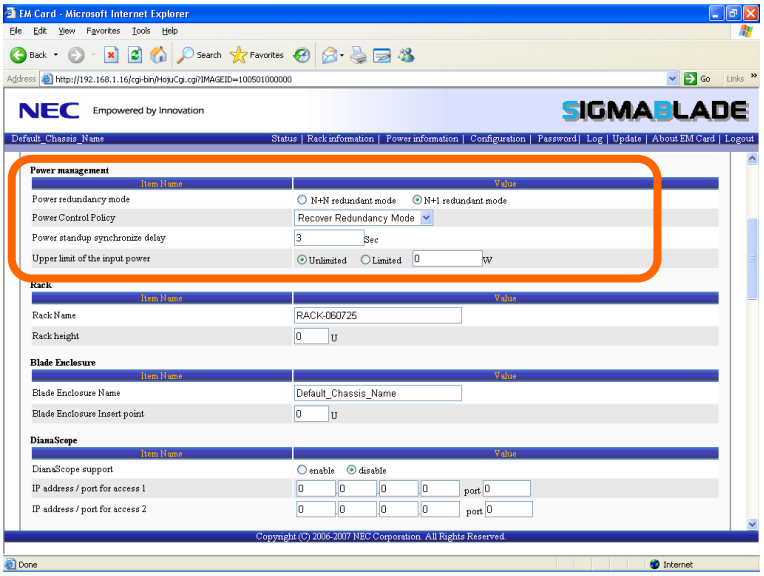
- Check that the value "Base address + 23" is 254 or smaller.

- EM card NTP server IP address:

  The DHCP server of the EM card can distribute an external NTP server address to the management I/F of CPU blades, switch modules, and UPS. Specify the IP address of an external NTP server.

Power Management

Use this page to specify the power redundancy mode, power control policy, and power unit waiting time of the EM card.



- Power redundancy mode

  Specify the power redundancy mode of the EM card.

  – N+N redundant mode:
  Each power supply unit (PSU) is divided into two groups to configure the redundant power supply system. AC line group 1 is composed of PSU1 and PSU2, and AC line group 2 is composed of PSU3 and PSU4.

  – N+1 redundant mode:
  Each power supply unit is controlled individually. Installing one power supply unit in addition to the required number of power units enables the redundant power supply system.

> **NOTE:** The default setting is "N+N redundant mode."

IMPORTANT:

- The N8405-023 PSU works only in [N+N redundant mode]. Be sure to specify [N+N redundant mode] before using the N8405-023 PSU.
- Specify "maintain redundancy" or "recover redundancy" mode for the N8405-039 PSU. Under this condition, "N+1 redundant mode" is recommended.
- Do not use power units of different types in the same Blade Enclosure.

- Power Control Policy:

  Specify the power control policy of the EM card.

  The power control policy includes three modes: CPU performance, "maintain redundancy," and "recover redundancy."

  The default setting is the CPU performance mode.

  IMPORTANT: Specify "maintain redundancy" or "recover redundancy" mode for the N8405-039 PSU. Under this condition, "N+1 redundant mode" is recommended.

  – CPU performance mode

    The CPU performance mode makes the EM card prioritize performance of CPU blades. In this mode, if the EM card cannot accept a new power request from a CPU blade while maintaining power redundancy, the EM card releases the power redundant configuration and permits the new power request from the CPU blade.

    IMPORTANT: If a power unit fails during operation under the release of the power redundant configuration, then the system may be forcibly shut down.

– Maintain redundancy mode

The "maintain redundancy" mode makes the EM card accept a new power request from a CPU bladeonly if the power redundancy can be maintained. If the EM card cannot accept a new power request from a CPU blade while maintaining power redundancy, the EM card denies the request. In the "maintain redundancy" mode, no emergency measures are taken if the power redundancy is lost due to a failure of a power unit.

IMPORTANT: When a power unit fails with no power redundancy status, the system may be forcibly shut down.

– Recover redundancy mode

The "recover redundancy" mode makes the EM card accept a new power request from a CPU blade while maintaining power redundancy by limiting the performance of CPU blades to reduce the power consumption in the event of a power unit failure.

IMPORTANT: Depending on the operation of CPU blades, the EM card may not be able to reduce the power consumption to allow the power redundancy to be recovered.

- Power standup synchronize delay:

  With the power redundancy mode set to the N+N redundant mode, the system waits until power is supplied to each of the two AC line groups. Specify the waiting time in seconds. The default setting is 3 seconds.

- Upper limit of the input power:

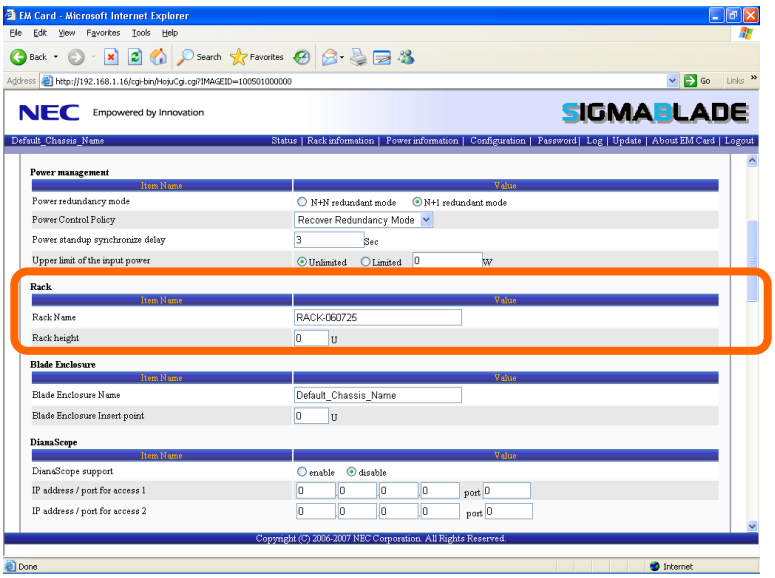
  Specify the maximum power consumption managed by the EM card.

  Selecting "No limit" causes this item to be set to "0." Then, the EM card calculates the value used for the maximum power consumption depending on the configuration of installed power units and UPS's managed by the EM card.

  The default setting is "No limit" (0 watt).

Rack

Specify the information of the rack on which the Blade Enclosure is installed.



- Rack Name:
  Specify the name of the rack.

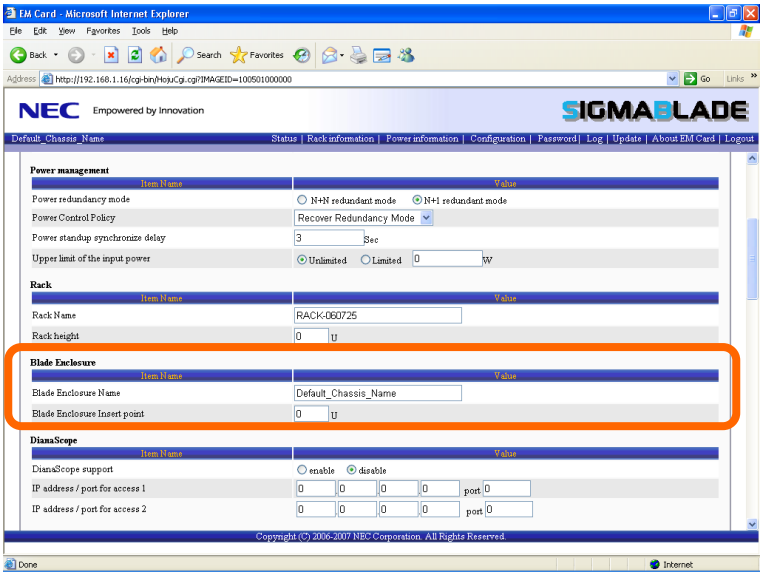
NOTES:

- NEC ESMPRO Manager accepts single-byte characters including alphanumerics, period, hyphen, and underscore. Accordingly, it is recommended to use these characters when specifying a name.
- If the Blade Enclosures inter connect is used, the rack name is shared. The rack name set in a Blade Enclosure will also be set in the other Blade Enclosures.
- If nothing is specified for "Rack Name," the value stored in the Blade Enclosure is used as"CFG_RACK_NAME" in the configuration file.

- Rack height:
  Specify the height of the rack.

Blade Enclosure

Specify the information of the Blade Enclosure.



- Blade Enclosure Name:
  Specify the name of the Blade Enclosure.

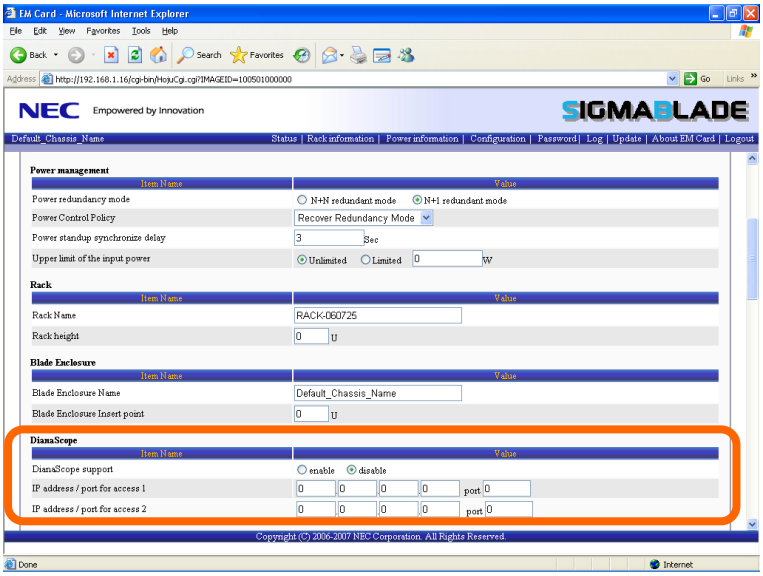
  NOTE:

  - NEC ESMPRO Manager accepts single-byte characters including alphanumerics, period, hyphen, and underscore. Accordingly, it is recommended to use these characters when specifying a name.
  - If nothing is specified for "Blade Enclosure Name", the value stored in the Blade Enclosure is used as "CFG_ENCLOSURE_NAME" in the configuration file.

- Blade Enclosure Insert point:
  Specify the location to install the Blade Enclosure in the unit of U counted from the bottom of the rack.

DianaScope

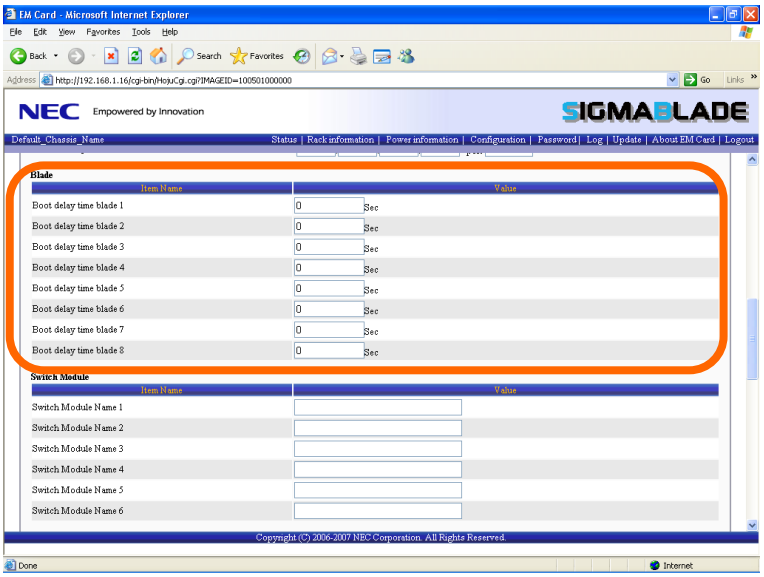
Specify the linkage with NEC DianaScope.



- DianaScope support:
  Specify whether to enable or disable linkage with NEC DianaScope. The default setting is "Enabled."
- IP address/port for access 1:
  Specify the IP address and port of NEC DianaScope Manager. This IP address is used as a primary destination for configuration change notification. The default value is "0.0.0.0" (configuration change notification is not executed).
- IP address/port for access 2:
  Specify the IP address and port of NEC DianaScope Manager. This IP address is used as a secondary destination for configuration change notification. The default value is "0.0.0.0" (configuration change notification is not executed).

CPU Blade

Specify the delay time for issuing power-on permission to each CPU blade after the system is powered on.


EM Card - Microsoft Internet Explorer
NEC Empowered by Innovation
SIGMABLADE
Default_Chassis_Name
Status | Rack information | Power information | Configuration | Password | Log | Update | About EM Card | Logout
Blade
Item Name
Value
Boot delay time blade 1
Boot delay time blade 2
Boot delay time blade 3
Boot delay time blade 4
Boot delay time blade 5
Boot delay time blade 6
Boot delay time blade 7
Boot delay time blade 8
Sec
Switch Module
Switch Module Name 1
Switch Module Name 2
Switch Module Name 3
Switch Module Name 4
Switch Module Name 5
Switch Module Name 6
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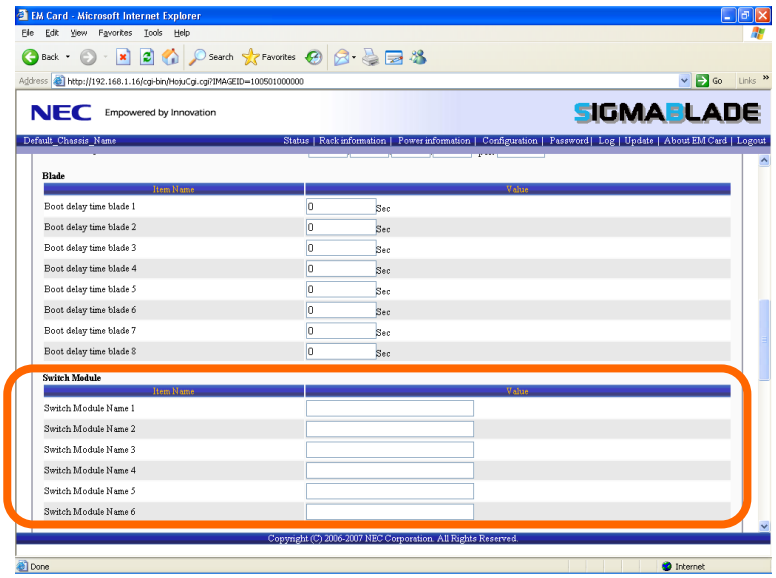
Done
Internet

NOTE: This feature is mainly used for SUN booting via a FC switch module.Generally, the default setting ("0": no delay) may be used.

IMPORTANT: The POWER switch does not power on the CPU blade during the delay time. Wait until the delay time is over.

Switch Module

Specify the name of the switch module in each slot.

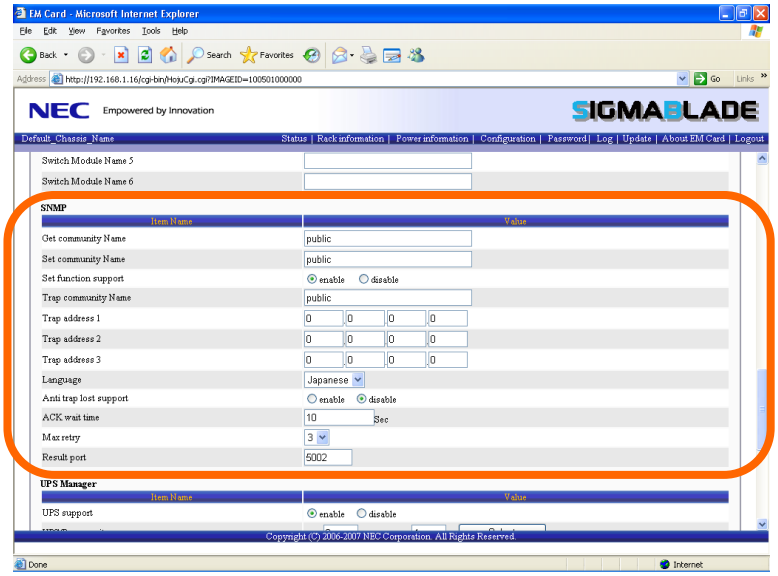


NOTES:

- NEC ESMPRO Manager accepts single-byte characters including alphanumerics, period, hyphen, and underscore. Accordingly, it is recommended to use these characters when specifying a name.
- Specify the switch module name for each slot. If you move the switch module to another slot, the switch module name is changed corresponding to the new slot.

SNMP

Specify the SNMP information.



- Get community Name:
  Specify the community name used when getting information from the EM card via SNMP. Up to 32 ASCII characters can be used.
  The default name is "public."
- Set community Name:
  Specify the community name used when setting information in the EM card via SNMP. Up to 32 ASCII characters can be used.
  The default name is "public."
- Set function support:
  Specify whether to enable or disable the feature to set information in the EM card via SNMP.

> **NOTE:** Select "Use" to operate the ID LED's on the CPU blade and switch module remotely from NEC ESMPRO Manager.

- Trap community Name:
  Specify the community name used for sending SNMP trap to the EM card. Up to 32 ASCII characters can be used. The default name is "public."

- Trap address:
  Specify the destination IP address for sending a SNMP trap. Up to three destinations can be specified. The default value is "0.0.0.0" for the three destinations.

  NOTE: The trap message will be sent to all the specified destinations.

- Language:
  Specify the language used in a SNMP trap message. Select a language from the pull-down menu.

- Anti trap lost support:
  Specify whether to enable or disable the acknowledge response of a trap message.
  If enabled, NEC ESMPRO Manager issues an acknowledge message when it receives a SNMP trap message. If an acknowledge message is not received within the specified time, the EM card retransmits the same trap.

  IMPORTANT: Anti TRAP Lost is effective only when the SNMP trap message is received by NEC ESMPRO Manager.

The following settings are used when "Anti TRAP Lost" is set to "Enabled:"

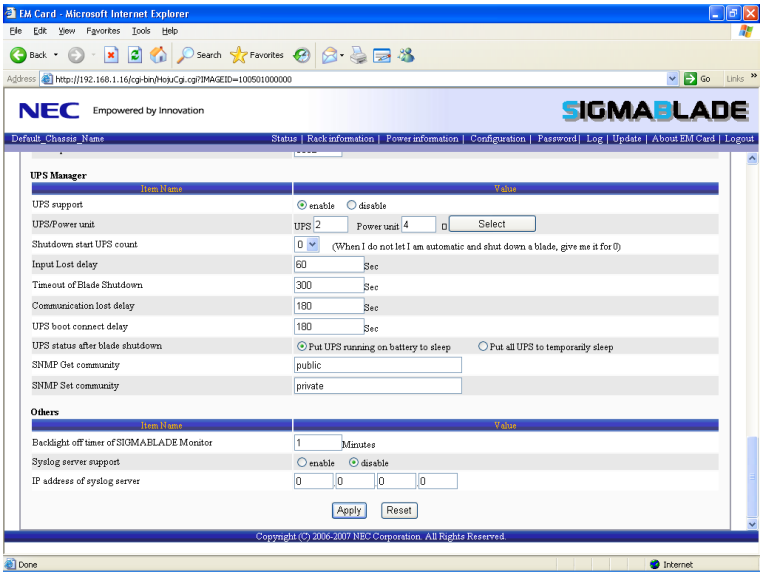
- ACK wait time:
  Specify the reply waiting time for a SNMP Trap sent from NEC ESMPRO Manager (unit: [second]). The default is 10 seconds.

- Max retry:
  Specify the number of retries if no acknowledge message from NEC ESMPRO Manager is received within the specified time.

- Result port:
  Specify the port number to receive the acknowledge response of a trap message sent from NEC ESMPRO Manager. The default value is 5002. Generally, you do not need to change this value.

UPS Manager

Use this page to specify the information required when the EM card manages UPS's for backup of the Blade Enclosure.



- UPS support:

  Specify whether the EM card manages UPS's for backup of the Blade Enclosure or not.

  NOTES:

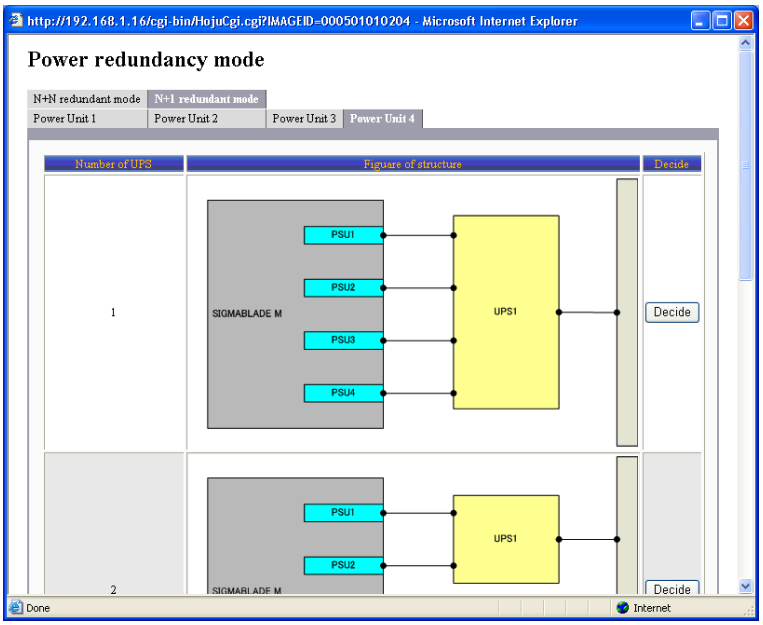
  - UPS management by the EM card requires that the DHCP server of the EM card distribute IP addresses. Therefore, select "Use" in [IP address distribution by DHCP] in [EM card network].
  - For UPS/SNMP, you may use the default setting as is.

  IMPORTANT: UPS management by the EM card prevents UPS's from being controlled by ESMPRO/AutomaticRunningController. When UPS control by ESMPRO/AutomaticRunningController is required, select "No use."

  The following settings are enabled when the UPS management feature is set to "Use:"

■ UPS/power unit

Specify the number of UPS's managed by the EM card and the number of power units installed in the Blade Enclosure. Select the proper system configuration instead of specifying values. When you click the [Select] button, the configuration selection screen shown below opens:



Click the tab of the power redundancy mode (power redundant configuration). (In the example, the N+N redundant mode is selected.)

Next, click the tab showing the number of power units installed in the Blade Enclosure. (In the exemple, four power units are installed in the Blade Enclosure.)

Scroll down to select the proper configuration and click the [Define] button.

NOTE: Only the configurations appearing on this screen are supported. To use the UPS management by the EM card, select any of the configurations appearing on the screen.

- Shutdown start UPS count

  Specify the minimum number of UPS's required to maintain system operation. When power to a UPS is interrupted, CPU blades can be shut down. If the number of available UPS's falls below the specified minimum, CPU blades are shut down.

  If you do not want CPU blades to be shut down automatically, set this value to "0." The default setting is "0" (no shutdown of CPU blades).

  NOTE: When using Windows 2003 Server, "Logging on to the system is not required to shut down the system" should be enabled in the Security Policy tab.

  IMPORTANT: As described above, in the event that power to the UPS is interrupted, CPU blades may be shut down automatically. However, after power to the UPS is restored, the CPU blades will not start automatically. You need to power on the CPU blades manually.

- Input lost delay:

  Specify the time in seconds the EM card waits until it determines that power to the UPS's is interrupted. This prevents CPU blades from being shut down due to momentary power interruption. If power to the UPS's is interrupted, then the system is powered by battery. The default setting is "60" seconds.

- Timeout of Blade Shutdown:

  When the EM card provides UPS management, it can direct CPU blades to shut down when power to the UPS's is interrupted. Specify the time the EM card waits until the shutdown is complete in seconds. The default setting is "300" seconds.

- Communication lost delay:

  Specify the time in seconds the EM card waits until it determines that a UPS is unavailable after communication with the UPS by SNMP is lost. The default setting is "180" seconds.

  NOTE: When communication with a UPS is lost, the EM card determines that the UPS is no longer available. If the number of available UPS's falls below the minimum required for normal operation, the EM card shuts down the CPU blades and turns off the UPS's.

- UPS boot connect delay:

  Specify the time in seconds the EM card waits for connections of online UPS's at system boot. If the the number of online UPS's does not reach the specified value within this time, the EM card calculates the maximum power consumption possible for the system assuming that the remaining UPS's are not connected. The default setting is "180" seconds.

  NOTE: Online UPS means one in a normal output state (online or manual bypass state).

- UPS status after blade shutdown:

  When CPU blades are shut down due to power interruption of UPS's, all the UPS's can be entered into the sleep state temporarily after completion of the shutdown.

  The temporal sleep period is six minutes.

  The default setting is "Enters only battery-driving UPSs into sleep state." Generally, the default setting does not need to be changed.

- SNMP Get community:

  Specify the community name for SNMP Get request issued to UPS's. The value should match the settings in the UPS's. The default setting is "public."

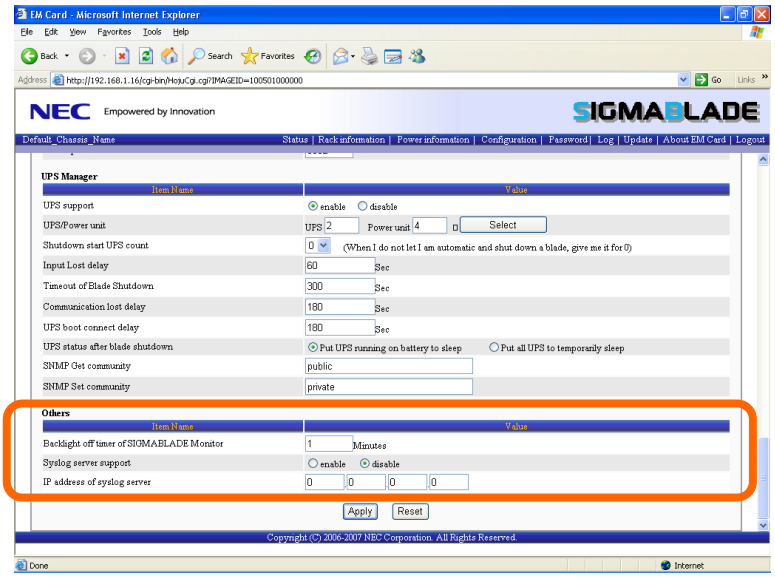
- SNMP Set community:

  Specify the community name for SNMP Set request issued to UPS's. The value should match the settings in the UPS's. The default setting is "private."

  NOTE: For UPS/SNMP, you may use the default setting as is.

Others

Specify the time to automatically turn off the backlight of the SIGMABLADE monitor. Use this page to specify an external syslog server used to transfer the EM card syslog.

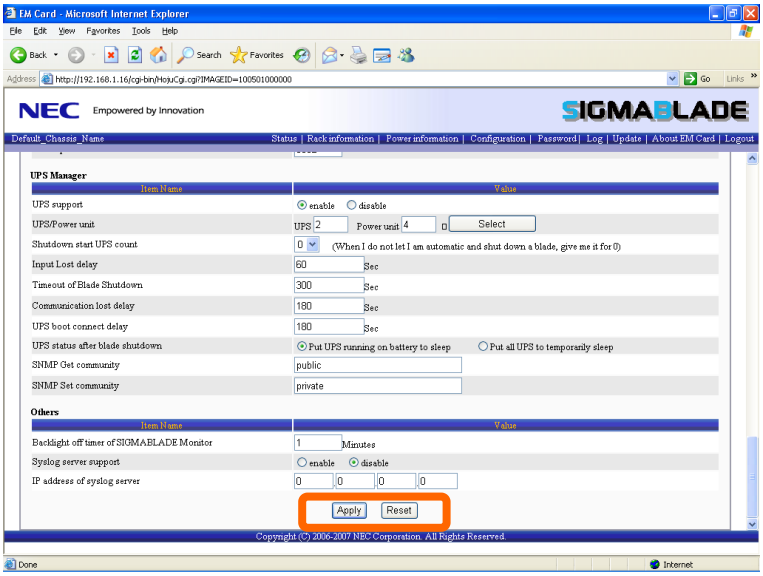


- Backlight off timer of SIGMABLADE Monitor:
  Specify the time in seconds.
- Syslog server support:
  Set this item to "Use" when transferring the EM card syslog to an external syslog server. The default setting is "Not use."
- IP address of syslog server:
  Specify the IP address of an external syslog server when "Use" is specified for "Use syslog server." The default value is "0.0.0.0"

NOTE: To transfer the syslog of the EM card to an external syslog server, be sure to start the syslog server before the EM card. If the syslog server is not started when the EM card attempts to write the syslog to the syslog server, the syslogd command is aborted and no syslog is collected.

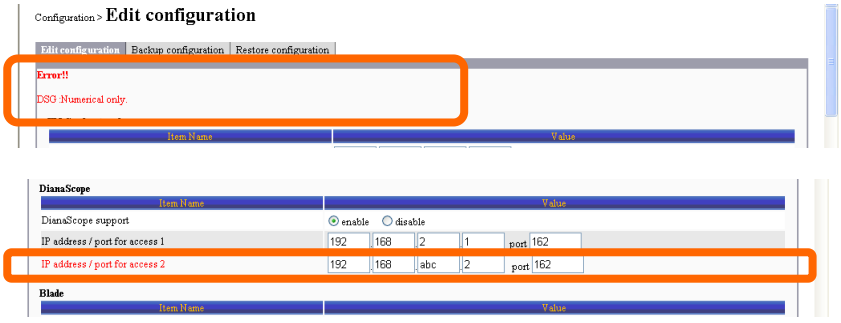
Apply

Click the [Apply] button at the bottom of the screen to save the modified information in the configuration file and apply it to the EM card. When two EM cards are installed, the settings are applied to both cards.



When you click the [Apply] button, the information on the Web screen is verified. If no problem is found, the data is written to the configuration file (/var/nvdata/rw_poem.conf) and applied to the EM card.

> **NOTE:** If any problem is found in the information, an error message is displayed at the top of the page. The item that has a problem is indicated in red, as shown in the figure below.



IMPORTANT: Executing the "apply" command reboots the EM card. If two EM cards are installed, both cards are rebooted. While rebooting, the bridge and SNMP functions are stopped. Accordingly, the connection via the management LAN of CPU blades and switch modules is temporarily disconnected. In addition, system monitoring by NEC ESMPRO Manager is temporarily disabled. If a timeout error occurs, reconnect after the active EM card has rebooted.

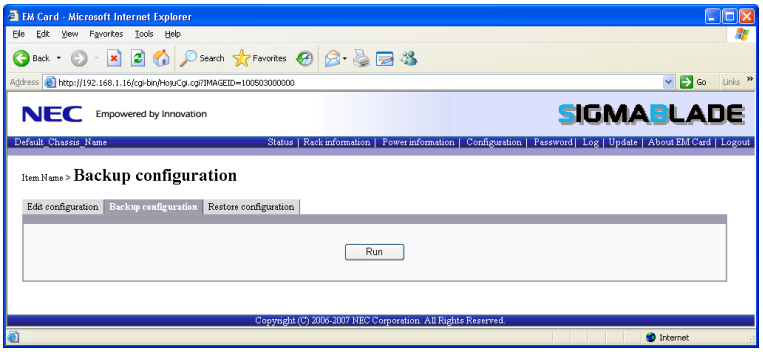
NOTE: When two EM cards cards are installed, check if the standby EM card works normally. If the standby EM card is activated or faulty, the "apply" command cannot be executed.
Wait for a moment until the standby EM card becomes ready.
If the standby EM card is faulty, remove it before executing the "apply" command.

When you click the [Reset] button, the current settings are displayed.

Backup Configuration

Creates a backup file of the configuration information.

When you click the [Backup configuration] tab on the Configuration menu, the following screen appears:


EM Card - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://192.168.1.16/cgi-bin/HojuCgi.cgi?IMAGEID=100503000000
Go Links
NEC Empowered by Innovation
SIGMABLADE
Default_Chassis_Name
Status | Rack information | Power information | Configuration | Password | Log | Update | About EM Card | Logout
Item Name > Backup configuration
Edit configuration
Backup configuration
Restore configuration
Run
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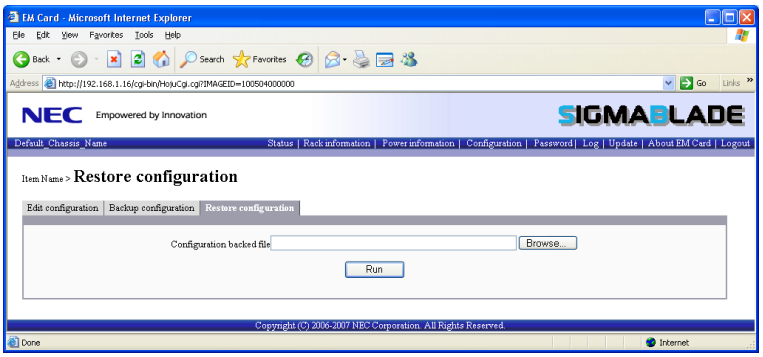
Internet

Run

When you click the [Run] button, a dialog to specify the directory to store the backup file appears. Specify the directory to store the backup file and its filename. Then, the backup process starts.

Restore Configuration

Restores the backup file created in "Backup Configuration" and applies it to the EM card.



IMPORTANT: Executing the "apply" command reboots the EM card. If two EM cards are installed, both cards are rebooted. While rebooting, the bridge and SNMP functions are stopped. Accordingly, the connection via the management LAN of CPU blades and switch modules is temporarily disconnected. In addition, system monitoring by NEC ESMPRO Manager is temporarily disabled. If a timeout error occurs, reconnect after the active EM card has rebooted.

NOTE: When two EM cards are installed, check if the standby EM card works normally. If the standby EM card is activated or faulty, the "apply" command cannot be executed.
Wait for a moment until the standby EM card becomes ready.
If the standby EM card is faulty, remove it before executing the "apply" command.

Configuration backed file

When you click the [Browse] button, a dialog to select a file appears. Select a backup file to restore from this dialog.

Apply

Select the source backup file and click the [Run] button to transfer the source backup file to the EM card. The selected source file is applied to the EM card.

IMPORTANT: Use the backup file created in "Backup of Environmental Setup" described earlier.

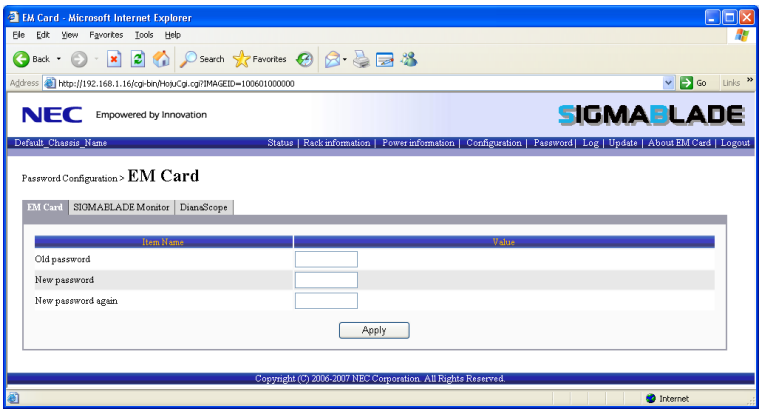
NOTE: If the configuration file (/var/nvdata/rw_poem.conf) has been modified, apply it through the command line console. See Chapter 3 for details.

Password Configuration

When you click [Password] on the menu bar, a window to set the passwords for the EM card, SIGMABLADE monitor, and linkage with NEC DianaScope appears.

Change Password for EM Card

When you click the [EMCard] tab, the following screen appears:



Enter Password

- Old password:
  Enter the current password.
- New password:
  Enter the new password.
- New password again:
  Enter the new password for confirmation.

> **NOTE:** The characters you type are displayed as "●" to hide the actual characters.

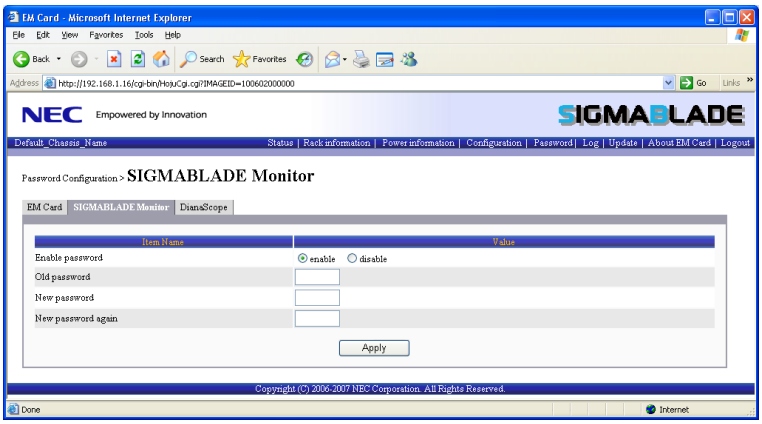
Apply

When you click the [Apply] button, the EM card compares the password entered in the old password column with the registered password. If they match, the two new passwords are compared. If they match, the password is registered as the new password.

If they do not match, the new password is not registered and the old password is retained.

Change Password for SIGMABLADE Monitor

When you click the [SIGMABLADE Monitor] tab, the following screen appears:



Enable Password

Specify whether to use a password for SIGMABLADE monitor or not.

If you select [disable] and apply it, you can skip password entry when using the SIGMABLADE monitor.

Enter Password

- Old password:
  Enter the current password.
- New password:
  Enter the new password.
- New password again:
  Enter the new password for confirmation.

> **NOTE:** The characters you type are displayed as "●" to hide the actual characters.

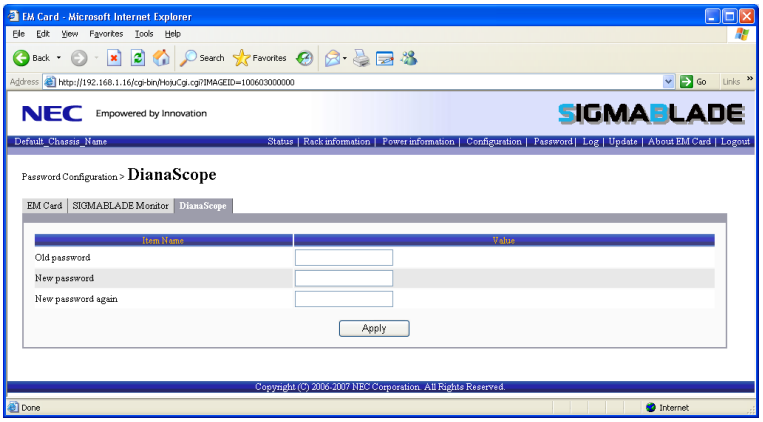
Apply

When you click the [Apply] button, the EM card compares the password entered in the old password column with the registered password. If they match, the two new passwords are compared. If they match, the password is registered as the new password.

If they do not match, the new password is not registered and the old password is retained.

Change Password for Linkage with DianaScope

When you click the [DianaScope] tab, the following screen appears:



Enter Password

- Old password:
  Enter the current password.
- New password:
  Enter the new password.
- New password again:
  Enter the new password for confirmation.

> **NOTE:** The characters you type are displayed as "●" to hide the actual characters.

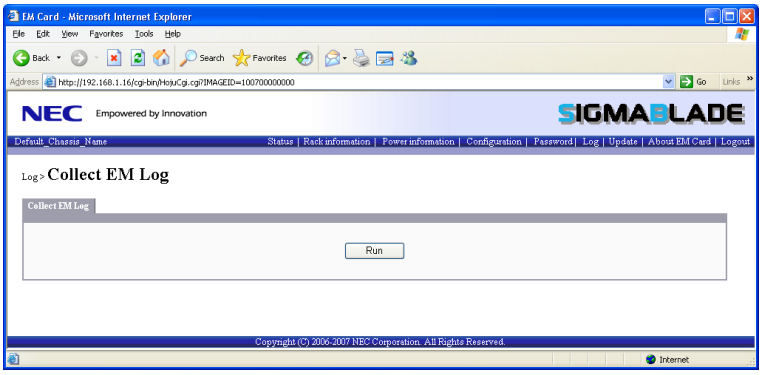
Apply

When you click the [Apply] button, the EM card compares the password entered in the old password column with the registered password. If they match, the two new passwords are compared. If they match, the password is registered as the new password.

If they do not match, the new password is not registered and the old password is retained.

Log Management

When you click [Log] on the menu bar, a window to collect the EM card log appears.


EM Card - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://192.168.1.16/cgi-bin/HojuCgi.cgi?IMAGEID=100700000000
Go Links
NEC Empowered by Innovation
SIGMABLADE
Default_Chassis_Name
Status | Rack information | Power information | Configuration | Password | Log | Update | About EM Card | Logout
Log > Collect EM Log
Collect EM Log
Run
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Internet

Collect EM Log

Collects the logs of the EM card.

> **NOTE:** The logs collected on this page are the same as those collected by executing the "collect" command on the command line console.

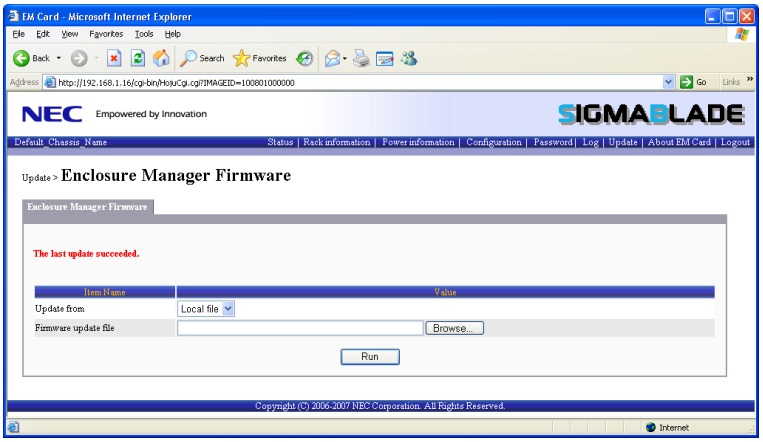
When you click the [Run] button, a dialog to specify the directory to store the log file appears. Specify the directory to store the log file and its filename. Then, the log collection process starts.

Update Firmware

When you click [Update] on the menu bar, a window to update the firmware of the EM card appears.

Update EM Card Firmware

Updates the firmware of the EM card.



Update from

The data to be updated is "Local File" on the computer on which you are using the Web console.

Firmware update file

When you click the [Browse] button, a dialog to select a file appears. Select a data file to update from this dialog.

NOTE: The files named "*.tgz" that contain the following files are updated:

– "em.kernel": Kernel image file

– "em.rfs": File system image file

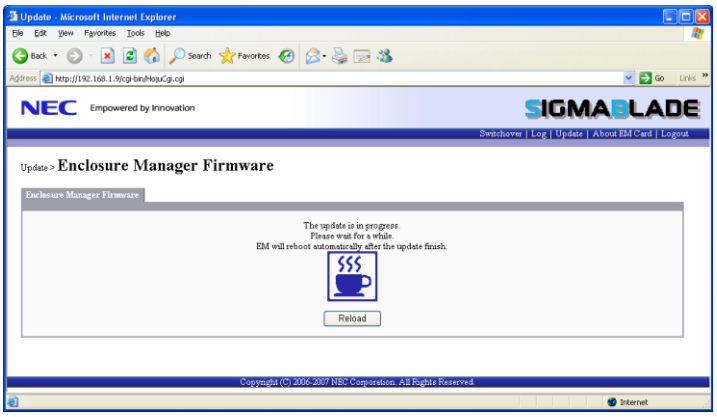
– "u-boot.bin" : u-boot image file

Apply

Select the file and click the [Run] button to transfer the update data file to the EM card. The selected file is updated.

> **IMPORTANT:** If the update is executed from the Web console of the active EM card, the firmware of the active EM card is updated. It is recommended to execute the update from the Web console of the standby EM card.
> After updating, the EM card is rebooted automatically.
> In the duplexed EM card configuration, the active EM card is switched by the switchover feature if the update is executed on the active EM card.
> Executing the "apply" command reboots the EM card. While rebooting, the bridge and SNMP functions are stopped. Accordingly, the connection via the management LAN of CPU blades and switch modules is temporarily disconnected. In addition, system monitoring by NEC ESMPRO Manager is temporarily disabled. If a timeout error occurs, reconnect after the active EM card has rebooted.

The screen shown below is displayed while the update is in progress:


Update - Microsoft Internet Explorer
NEC
Empowered by Innovation
SIGMABLADE
Switchover | Log | Update | About EM Card | Logout
Update > Enclosure Manager Firmware
Enclosure Manager Firmware
The update is in progress.
Please wait for a while.
EM will reboot automatically after the update finish.
Reload
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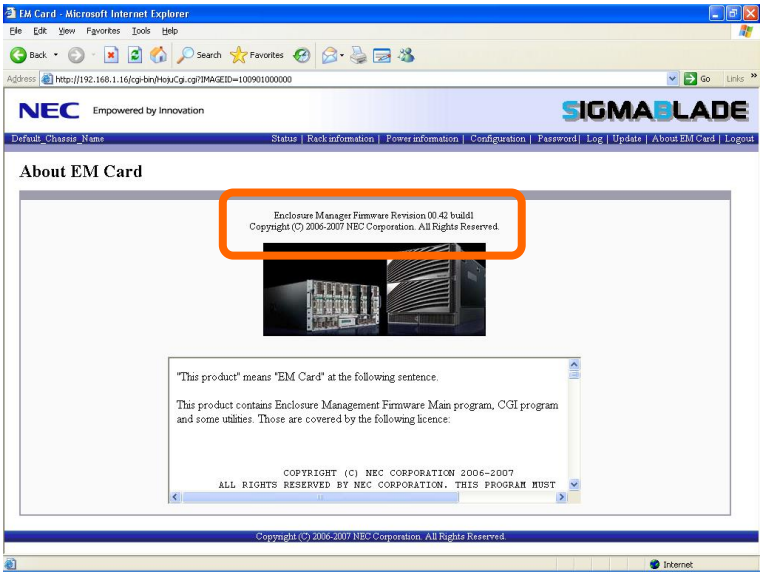
> **NOTE:** The on-screen information is not updated automatically. To view the latest information, click the [Reload] button.

When the update process is complete and the EM card is rebooted, this screen is not displayed even though the [Reload] button is clicked.

Check Revision

When the update process is complete and the EM card is rebooted, log in to the Web console to check the firmware revision.

When you click [About EM Card] on the menu bar, the following screen appears. Check the firmware revision of the EM card on this page.


EM Card - Microsoft Internet Explorer
NEC
Empowered by Innovation
SIGMABLADE
Default_Chassis_Name
Status | Rack information | Power information | Configuration | Password | Log | Update | About EM Card | Logout
About EM Card
Enclosure Manager Firmware Revision 00 42 build1
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"This product" means "EM Card" at the following sentence.
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ALL RIGHTS RESERVED BY NEC CORPORATION. THIS PROGRAM MUST
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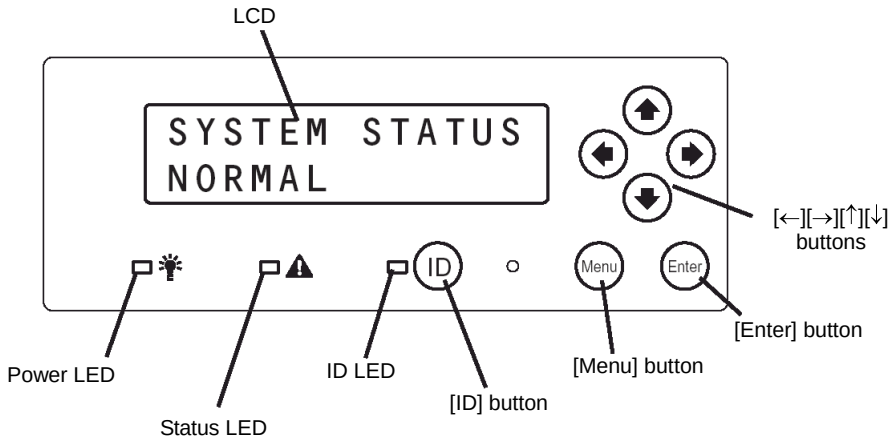
Chapter 5

SIGMABLADE Monitor

This section explains how to use the SIGMABLADE monitor.

Components of SIGMABLADE Monitor

The SIGMABLADE monitor is composed of a LCD, buttons, and LED's. Various features are provided in menu format and activated by pressing the buttons.



LED Indication

When the EM card is connected and operating normally, it controls the LED indications.

LED name	Indication	Description
Power LED	On (green)	Turns green when the Blade Enclosure is powered on.
	Off	Turns off when the Blade Enclosure is powered off.
Status LED	On (green)	Turns green when the Blade Enclosure is powered on and all the modules are operating normally.
	On (amber)	Turns amber when any of the modules is faulty.
	On (red)	Wait for a moment. When the diagnostic test completes, the LED turns green.
		Turns red when a fatal error occurs. This LED turns red when the EM card is not connected properly or is not operating normally. Check the LCD indication.
ID LED	On (blue)	Turns blue when the [ID] button is pressed or the command to turn on the ID LED is issued from the remote console.
	Off	Turns off when the [ID] button is pressed.

Using SIGMABLADE Monitor

The operation panel (composed of buttons, LCD, and LED's) installed in the Blade Enclosure displays the system and CPU blade status.

Various features are provided in menu format and activated by pressing the button.

Top Menu

When the Blade Enclosure is powered on and diagnosis of the SIGMABLADE monitor is complete, the top menu shown below appears. The upper line of the LCD shows the title, and the lower line shows the status of the overall system.

```
SYSTEM STATUS
NORMAL
```

Main Menu

When you press the [Menu] button on the Top Menu, the Main Menu shown below appears:

```
Main Menu
1: KVM/DVD Sel      ↓
```

Press the [↓] or [↑] buttons to move the cursor vertically.

The screen scrolls as shown below:

```
1: KVM/DVD Sel
2: System INFO      ↓
↓↑
2: System INFO      ↑
3: Blade INFO       ↓
↓↑
3: Blade INFO       ↑
4: SWM INFO         ↓
↓↑
4: SWM INFO         ↑
5: System CONFIG    ↓
↓↑
5: System CONFIG    ↑
6: Collect LOG
```

Select the desired menu and press the [Enter] button to go to the submenu.

NOTE: In the rightmost column, "↓" indicates that you can go to the next menu, and "↑" indicates that you can go to the previous menu.

Switching KVM/DVD

If you select [1: KVM/DVD Sel] on the Main Menu, the KVM/DVD Select screen appears.

```
KVM/DVD Select
KVM: 4   DVD: 8
```

The slot number of the connected CPU blade is displayed on the screen.

NOTES:

- In the above example, the local KVM is connected to the CPU blade in slot 4, and the local DVD drive and USB port are connected to the CPU blade in slot 8.
- At power-on of the Blade Enclosure (initial state), slot 1 is selected for the KVM/DVD.
- Selecting "E" in the [DVD Select] field allows the EM card to use the DVD/USB. Select "E" when updating the EM card firmware or collecting the EM card log. However, when "E" is selected, the DVD/USB is disabled for all the CPU blades.

IMPORTANT:

- If the EM card is not connected correctly or is not operating normally, the protection feature may disable the connection of the KVM and DVD/USB. When the KVM or DVD/USB is not available for a CPU blade, check if the EM card is operating normally.
- If you select the DVD/USB while the CPU blade is using DVD/USB devices, a malfunction may occur. Select the DVD/USB after the CPU blade finishes its operations.
- Do not connect or disconnect the KVM or DVD/USB while the CPU blade is starting up. Otherwise, the CPU blade may fail to start.

Press the [↓] or [↑] buttons to select a slot number between 1 and 8.

Press the [→] or [←] buttons to switch the selection between KVM and DVD.

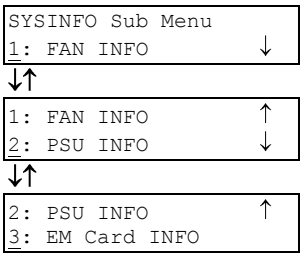
Press the [Enter] button to apply your selection, and to return to the Main Menu. Press the [Menu] button to return to the Main Menu without changing the setting.

Displaying System Information

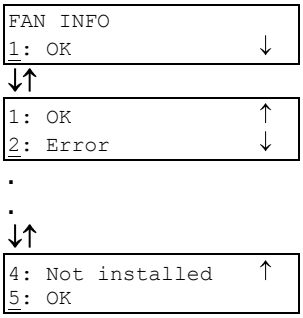
Displaying Fan/Power Status

Displays the installation status of the slots for the fan units and power units of the Blade Enclosure.

When you select [2: SYSTEM INFO] on the Main Menu, the submenu shown below appears:



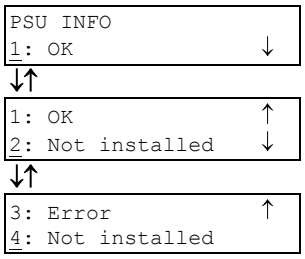
If you select [1: FAN INFO] on the SYSINFO Sub Menu, the status of the slot of each fan unit is displayed.



NOTE: The slot number and installation status are displayed in order. If the fan unit is installed and is operating normally, "OK" is displayed. If the fan unit is installed but is faulty, "Error" is displayed. If no fan unit is installed, "Not installed" is displayed.

IMPORTANT: If "Error" is displayed, replace the fan unit according to the User's Guide of the Blade Enclosure.

If you select [2: PSU INFO] on the SYSINFO Sub Menu, the status of the slot of each power unit is displayed.



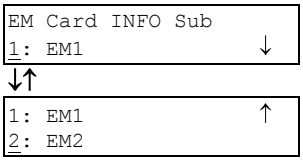
NOTE: The slot number and installation status are displayed in order. If the power unit is installed and is operating normally, "OK" is displayed. If the power unit is installed but is faulty, "Error" is displayed. If no power unit is installed, "Not installed" is displayed.

IMPORTANT: If "Error" is displayed, replace the power unit according to the User's Guide of the Blade Enclosure.

Displaying EM Card Information

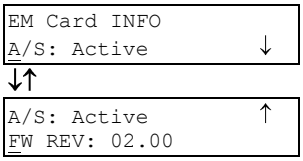
Displays the status of the EM card slot of the Blade Enclosure. The installation status, active/standby, and firmware revision of the EM card are displayed.

When you select [3: EM Card INFO] on the [SYSINFO Sub Menu], the submenu shown below appears to indicate the status of each EM card slot:



NOTE: If no EM card is installed, "Not installed" is displayed.

When you select [1: EM1] or [2: EM2] and press the [Enter] button, the active/standby state and the firmware revision of the selected EM card are indicated as shown below:



NOTE: If the firmware revisions of EM1 and EM2 are different, update the EM card with the earlier firmware revision to the latest one.

Displaying CPU Blade Information

Displaying Virtual LCD

You can view the contents of the virtual LCD of the CPU blade installed in the Blade Enclosure.

Press the [↓] or [↑] buttons on the [Blade INFO] menu to move the cursor to the desired CPU blade slot number, and press the [Enter] button. The contents of the virtual LCD of the selected CPU blade are displayed as shown below:

Press the [Menu] button to go back to the main menu.

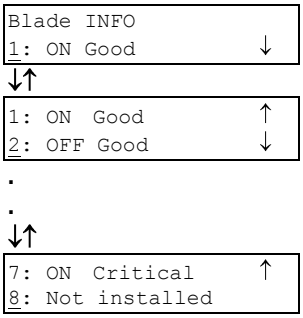
Press the [←] button to go back to the [Blade INFO] menu.

NOTE: If the CPU blade does not support the virtual LCD, "Not supported" is displayed. If the CPU blade fails to acquire the information on the virtual LCD, "Error" is displayed.

Displaying CPU Blade Status

Displays the status of the CPU blade slots of the Blade Enclosure. The installation status, power supply status, and LED indication are displayed.

When you select [3: Blade INFO] on the Main Menu, the submenu shown below appears:



NOTE: The following status is displayed: Good (The CPU blade is operating normally.), Degraded (The CPU blade is degraded.), or Critical (The CPU blade is faulty). If no CPU blade is installed, "Not installed" is displayed following the slot number.

IMPORTANT:

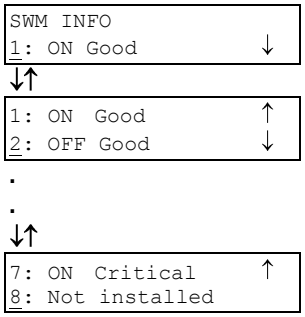
- If "Degraded" or "Critical" is displayed, refer to the User's Guide of the CPU Blade.
- When the installed CPU blade occupies two slots (e.g., NEC Express5800/120Bb-m6), the slot to the right of the installed slot is indicated as "Not installed."

Displaying Switch Module Information

Displaying Switch Module Status

Displays the status of the switch module slots of the Blade Enclosure. The installation status, power supply status, and LED indication are displayed.

When you select [4: SWM INFO] on the Main Menu, the submenu shown below appears:



NOTE: When a switch module is installed, the slot number, power supply status, and operation status are displayed in order. The following operation status is displayed: Good (the switch module is operating normally), Degraded (the switch module is degraded), or Critical (the switch module is faulty). If no switch module is installed, "Not installed" is displayed following the slot number.

IMPORTANT:

- If "Degraded" or "Critical" is displayed, refer to the User's Guide of the switch module.
- When the installed switch module occupies two slots, the slot to the right of the installed slot is indicated as "Not installed."

System Setup

Setting for EM

Sets the IP address of the EM card or the password for the SIGMABLADE monitor.

When you select [5: SYSTEM CONFIG] on the Main Menu, the submenu shown below appears:

```
Enter Password
0000
```

Press the [↓] or [↑] buttons to select a number between 0 and 9.
Press the [→] or [←] buttons to move the cursor horizontally.

Enter the four-digit password, and then press the [Enter] button.

If the entered password matches the registered one, the [EM CONFIG] menu appears.
If the password does not match, the Enter Password menu remains displayed.

Press the [Menu] button to return to the Main Menu.

IMPORTANT: The default password is "0000." Change the password according to "[EM CONFIG] Menu" described later.

[EM CONFIG] Menu

```
EM CONFIG
1: IP Address        ↓
↓↑
1: IP Address        ↑
2: Net Mask          ↓
↓↑
2: Net Mask          ↑
3: DEF Gateway       ↓
↓↑
3: DEF Gateway       ↑
4: Set PASSWD        ↓
↓↑
4: Set PASSWD        ↑
5: Enable PASSWD     ↓
↓↑
5: Enable PASSWD     ↑
6: Backup CONFIG     ↓
↓↑
6: Backup CONFIG     ↑
7: RESTR CONFIG      ↓
↓↑
7: RESTR CONFIG      ↑
8: FW Update
```

When you select [1: IP Address] on the [EM CONFIG] Menu, the screen shown below appears to set the IP address:

```
Set IP Address
192.168.001.010
```

NOTE: This setting is used as a floating IP of the active EM card.

Press the [↓] or [↑] buttons to select a number between 0 and 9.

Press the [→] or [←] buttons to move the cursor horizontally.

Press the [Enter] button to apply the setting.

Press the [Menu] button to return to the Main Menu.

NOTE: Did you specify a multiple of 4 for the last digit of <IP Address> ? If not, the EM card defines the last two bits as "00b."

When you select [2: Net Mask] on the [EM CONFIG] Menu, the screen shown below appears to set the subnet mask:

```
Set Net Mask
255.255.255.000
```

Press the [↓] or [↑] buttons to select a number between 0 and 9.

Press the [→] or [←] buttons to move the cursor horizontally.

Press the [Enter] button to apply the setting.

Press the [Menu] button to return to the Main Menu.

When you select [3: DEF Gateway] on the [EM CONFIG] Menu, the screen shown below appears to set the default gateway address:

```
Set DEF Gateway
192.168.001.254
```

Press the [↓] or [↑] buttons to select a number between 0 and 9.

Press the [→] or [←] buttons to move the cursor horizontally.

Press the [Enter] button to apply the setting.

Press the [Menu] button to return to the Main Menu.

When you select [4: Set PASSWD] on the [EM CONFIG] Menu, the screen shown below appears to set the password:

```
Set Password
0000
```

Press the [↓] or [↑] buttons to select a number between 0 and 9.

Press the [→] or [←] buttons to move the cursor horizontally.

Press the [Enter] button to apply the setting.

Press the [Menu] button to return to the Main Menu.

When you select [5: Enable Password] on the [EM CONFIG] Menu, the screen shown below appears to select whether to enable or disable the password:

```
Enable Password
Enable/Disable
```

The cursor position indicates the current setting.

Press the [→] or [←] buttons to move the cursor horizontally.

Press the [Enter] button to apply the setting.

Press the [Menu] button to return to the Main Menu.

Backup of EM Configuration File

Create a backup file of the EM card configuration file on a USB memory device connected to the USB port of the Blade Enclosure.
Selecting [6: Backup CONFIG] on the [EM CONFIG] menu starts the backup process.

If an old backup file exists on the USB memory device, the confirmation message shown below appears:

```
Overwrite?
Y/N
```

Press the [→] or [←] buttons to select "Y" or "N."

To execute the backup process by overwriting the current backup file, select"Y" and press the [Enter] button.

To cancel, select "N" and press the [Enter] button. The screen returns to the [EM CONFIG] menu.

The following screen is displayed while the backup process is executed:

```
Backuping
```

Upon completion of the backup process, the LCD displays the results.

- When backup completes successfully:

```
OK
```

- When backup fails:

```
Error
```

The following message is displayed if a USB memory device is not installed.
Insert a USB memory device in the USB port of the Blade Enclosure.

```
USB Memory
Not installed
```

The following message is displayed when the USB memory device is inserted but not connected to the EM card:

```
Media
Not selected
```

Select "E" in the [DVD] field on the KVM/DVD Select menu.

NOTE:

- If you press any button when the results or the error message is displayed, the screen returns to the [EM CONFIG] menu.
- The backup file is stored in the top directory (folder) of the USB memory device with the file name "backupem.tgz."

Restoring EM Configuration File

Restore the EM configuration file created by the backup procedure from a USB memory device connected to the USB port of the Blade Enclosure.

Selecting [7: RESTR CONFIG] on the [EM CONFIG] menu starts the restore process.

During the restore process, the screen shown below appears:

```
Restoring CONFIG
```

The following confirmation screen appears when the configuration file is successfully restored:

```
Apply?
Y/N
```

Press the [→] or [←] buttons to select "Y" or "N."

To apply the restored configuration file, select "Y" and press the [Enter] button.

> **IMPORTANT:** Executing the "apply" command reboots the EM card. If two EM cards are installed, both cards are rebooted. While rebooting, the bridge and SNMP functions are stopped. Accordingly, the connection via the management LAN of CPU blades and switch modules is temporarily disconnected. In addition, system monitoring by NEC ESMPRO Manager is temporarily disabled. If a timeout error occurs, reconnect after the active EM card has rebooted.

To cancel, select "N" and press the [Enter] button. The screen returns to the [EM CONFIG] menu.

> **IMPORTANT:** Even if you cancel before executing the "apply" command, the configuration file is read from the USB memory device. Accordingly, the configuration file will be applied at the next boot of the EM card or when executing the "apply" command from the CLI.

The following message is displayed if a USB memory device is not installed.
Insert a USB memory device in the USB port of the Blade Enclosure.

```
USB Memory
Not installed
```

The following message is displayed when the USB memory device is inserted but not connected to the EM card:

```
Media
Not selected
```

Select "E" in the [DVD] field on the KVM/DVD Select menu.

The following message is displayed when a configuration file is not found on the USB memory device.

```
File
Not found
```

NOTE: The configuration file is named "backupem.tgz" and stored in the top directory (folder) of the USB memory device.

If reading the configuration file fails, the following message is displayed:

```
Error
```

If the configuration file is not the correct one, the following message is displayed:

```
CONF File Error
```

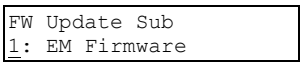
NOTE: If you press any button when the error message is displayed, the screen returns to the [EM CONFIG] menu.

Updating EM Firmware

Update the EM card firmware by using a USB memory device connected to the USB port of the Blade Enclosure or a CD-ROM in the DVD drive of the Blade Enclosure.

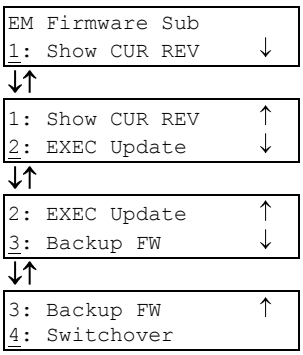
Select [8: FW Update] on the [EM CONFIG] menu to open the [FW Update Sub] menu.

[FW Update Sub] menu



Select [1: EM Firmware] to open the [EM Firmware Sub] menu.

[EM Firmware Sub] menu

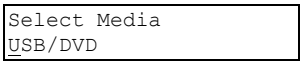


When you select [1: Show CUR REV] on the [EM Firmware Sub] menu, the current firmware revision of the active EM card is displayed.

Press any button to go back to the [EM Firmware Sub] menu.

When you select [2: EXEC Update] on the [EM Firmware Sub] menu, the [Select Media] menu appears.

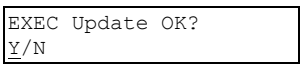
Select Media menu



Press the [→] or [←] buttons to select "USB" or "DVD."

Select the media containing the update file and press the [Enter] button.

The following confirmation message is displayed:



Press the [→] or [←] buttons to select "Y" or "N."

To cancel, select "N" and press the [Enter] button. The screen returns to the [EM Firmware Sub] menu.

To execute the update, select "Y" and press the [Enter] button.

The following screen appears when the update process starts:

```
Update Started
```

Press any button to go back to the [EM Firmware Sub] menu.

If you select [2: EXEC Update] on the [EM Firmware Sub] menu while the update is being executed, the following screen appears:

```
In Update
```

Press any button to go back to the [EM Firmware Sub] menu.

IMPORTANT: The update is executed on the active EM card. After updating, the EM card is rebooted automatically.
If two EM cards are installed, the active EM card is switched by the switchover feature.
If only one EM card is installed, while rebooting, the bridge and SNMP functions are stopped. Accordingly, the connection via the management LAN of CPU blades and switch modules is temporarily disconnected. In addition, system monitoring by NEC ESMPRO Manager is temporarily disabled. If a timeout error occurs, reconnect after the active EM card has rebooted

When you select "USB" on the Select Media menu but a USB memory device is not installed, the following message is displayed.

Insert a USB memory device in the USB port of the Blade Enclosure.

```
USB Memory
Not installed
```

The following message is displayed when the USB memory device is inserted but not connected to the EM card:

```
Media
Not installed
```

Select "E" in the [DVD] field on the KVM/DVD Select menu.

The following message is displayed when an update file is not found on the USB memory device.

```
File
Not found
```

NOTE: The update data files are stored in the top directory (folder) of the USB memory device with the following file names:

– "em.kernel": Kernel image file

– "em.rfs": File system image file

– "u-boot.bin" : u-boot image file

If no CD-ROM is inserted in the DVD drive when you select "DVD" on the [Select Media] menu, the following message is displayed.

Insert a CD-ROM in the DVD drive of the Blade Enclosure.

```
DVD
Not installed
```

The following message is displayed when the CD-ROM is inserted but the DVD drive is not connected to the EM card:

```
Media
Not selected
```

Select "E" in the [DVD] field on the KVM/DVD Select menu.

The following message is displayed when an update file is not found on the CD-ROM.

```
File
Not found
```

NOTE: The update files are stored in the EMFW directory (folder) in the CD-ROM with the following file names:

– "em.kernel": Kernel image file

– "em.rfs": File system image file

– "u-boot.bin": u-boot image file

If reading the update file fails, the following message is displayed:

```
Error
```

Press any button to go back to the [EM Firmware Sub] menu.

Backup of EM Firmware

Create a backup file of the EM card firmware on a USB memory device connected to the USB port of the Blade Enclosure.

When you select [3: Backup FW] on the [EM Firmware Sub] menu, the confirmation message shown below is displayed:

```
Backup FW OK?
Y/N
```

Press the [→] or [←] buttons to select "Y" or "N."

To cancel, select "N" and press the [Enter] button. The screen returns to the [EM Firmware Sub] menu.

To execute the backup process, select "Y" and press the [Enter] button.

If an old backup file exists on the USB memory device, the confirmation message shown below appears:

```
Overwrite?
Y/N
```

Press the [→] or [←] buttons to select "Y" or "N."

To cancel, select "N" and press the [Enter] button. The screen returns to the [EM Firmware Sub] menu.

To execute the backup process by overwriting the current backup file, select "Y" and press the [Enter] button.

The following screen is displayed while the backup process is executed:

```
Backuping FW
```

Upon completion of the backup process, the LCD displays the results.

- When backup completes successfully:

```
OK
```

- When backup fails:

```
Error
```

The following message is displayed if a USB memory device is not installed.

Insert a USB memory device in the USB port of the Blade Enclosure.

```
USB Memory
Not installed
```

The following message is displayed when the USB memory device is inserted but not connected to the EM card:

```
Media
Not selected
```

Select "E" in the [DVD] field on the KVM/DVD Select menu.

NOTES:

- If you press any button when the backup results or the error message is displayed, the screen returns to the [EM Firmware Sub] menu.
- The backup file is stored in the top directory (folder) of the USB memory device with the file name "emfw.tgz."

IMPORTANT: If the firmware revision of the EM card is Rev.01.XX, updating the firmware through the SIGMABLADE monitor is not supported. Accordingly, use the CLI command to apply the EM card firmware that is backed up.

EM Switchover

The following confirmation screen is displayed when you select [4: Switchover] on the [EM Firmware Sub] menu:

```
Switchover OK?
Y/N
```

Press the [→] or [←] buttons to select "Y" or "N."

To cancel, select "N" and press the [Enter] button. The screen returns to the [EM Firmware Sub] menu.

To execute switchover, select "Y" and press the [Enter] button.

Upon completion of switchover, the LCD displays the results.

- When switchover completes successfully:

```
OK
```

- When switchover fails:

```
Error
```

- When the standby EM card does not work normally:

```
Standby EM is
not ready.
```

NOTE: If you press any button when the results or the error message is displayed, the screen returns to the [EM Firmware Sub] menu.

Collecting Logs

EM Log

Save the log information of the active EM card in a USB memory device connected to the USB port of the Blade Enclosure.

When you select [6: Collect LOG] on the main menu, the [Collect LOG Sub] menu shown below appears:

```
Collect LOG Sub
1: EM
```

Selecting [1: EM] starts collecting the EM log.

If an old EM log file exists on the USB memory device, the confirmation message shown below appears:

```
Overwrite?
Y/N
```

Press the [→] or [←] buttons to select "Y" or "N."

To cancel, select "N" and press the [Enter] button. The screen returns to the [Collect LOG Sub] menu.

To collect the EM log by overwriting the current EM log file, select "Y" and press the [Enter] button.

The following screen is displayed while the EM log is collected:

```
Collecting LOG
```

Upon completion of EM log collection, the LCD displays the results.

- When log collection completes successfully:

```
OK
```

- When log collection fails:

```
Error
```

The following message is displayed if a USB memory device is not installed.

Insert a USB memory device in the USB port of the Blade Enclosure.

```
USB Memory
Not installed
```

The following message is displayed when the USB memory device is inserted but not connected to the EM card:

```
Media
Not selected
```

Select "E" in the [DVD] field on the KVM/DVD Select menu.

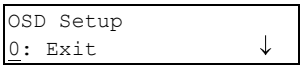
NOTES:

- If you press any button when the log collection results or the error message is displayed, the screen returns to the [Collect LOG Sub] menu.
- The collected EM log file is stored in the top directory (folder) of the USB memory device with the file name "collectem-XXX.XXX.XXX.XXX-YYMMDD-HHMMSS.tgz."
  XXX.XXX.XXX.XXX: IP address of the active EM card
  YYMMDD-HHMMSS: Creation date of the log file

Setting OSD (On Screen Display)

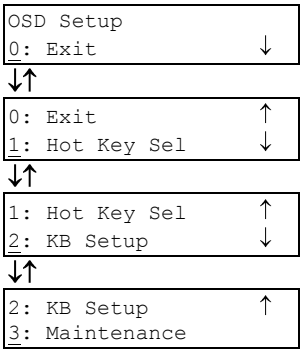
Set the OSD and KVM control feature of the SIGMABLADE monitor.

If you press the [Menu] button for four seconds or longer, the OSD Setup menu shown below appears:



Press the [↓] or [↑] buttons to move the cursor vertically.

The screen scrolls as shown below:



Select the desired menu and press the [Enter] button to go to the submenu.

Select [0: Exit] to exit the [OSD Setup].

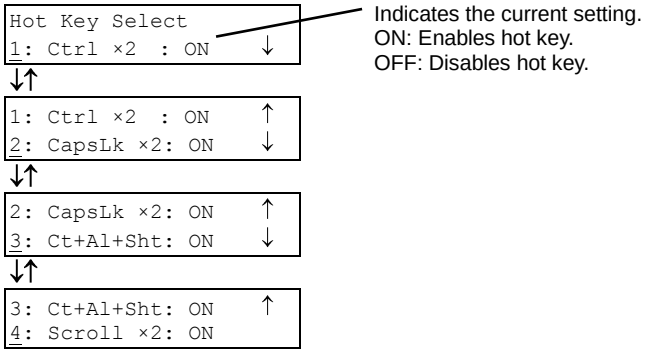
Press the [Menu] or [←] buttons to exit the [OSD Setup] menu.

NOTE: In the rightmost column, "↓" indicates that you can go to the next menu, and "↑" indicates that you can go to the previous menu.

Setting OSD Hot Key

Set the hot key to activate the OSD feature.

When you select [1: Hot Key Sel] on the OSD Setup Menu, the [Hot Key Select] menu shown below appears:



Press the [Enter] button to enable (ON) or disable (OFF) the hot key.

Press the [←] button to go back to the [OSD Setup] menu.

Press the [Menu] button to exit the [OSD Setup] menu.

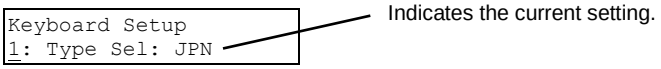
Item	Description
1: Ctrl x2	Press the <Ctrl> key twice. Pressing this hot key activates the OSD simple mode.
2: CapsLk x2	Press the <Caps Lock> key twice. Pressing this hot key activates the OSD simple mode.
3: Ct + Al + Sht	Press the <Ctrl>, <Alt>, and <Shift> keys simultaneously. Pressing this hot key activates the OSD menu mode.
4: Scroll x2	Press the <Scroll Lock> key twice. Pressing this hot key activates the OSD menu mode.

IMPORTANT: All hot keys are enabled (ON) by default. When the optional server switch unit is connected and you want to use a hot key, set the hot keys so that they do not conflict with other hot keys.
If a hot key is also used in an application program, select a different hot key to avoid a conflict.

Setting Keyboard Type

Select the type of keyboard to connect to the Blade Enclosure.

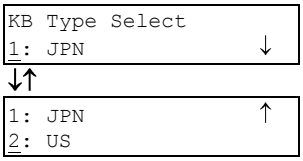
When you select [2: KB Setup] on the OSD Setup Menu, the [Keyboard Setup] menu shown below appears:



Press the [Enter] button to display the [KB Type Select] Menu.

Press the [←] button to go back to the [OSD Setup] menu.

Press the [Menu] button to exit the [OSD Setup] menu.



Select [1: JPN] and press the [Enter] button to define the keyboard type as "JPN."

Select [2: US] and press the [Enter] button to define the keyboard type as "US."

Press the [←] button to go back to the [Keyboard Setup] menu.

Press the [Menu] button to exit the [OSD Setup] menu.

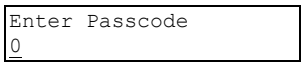
NOTE: The default is "JPN" (Japanese keyboard).

Maintenance Menu

Display the maintenance menu. In normal operation, you do not need to use this menu.

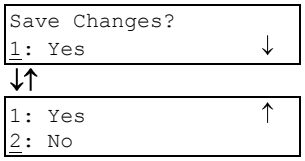
When you select [3: Maintenance] on the OSD Setup menu, the Enter Passcode window shown below appears. If you select the [Maintenance] menu by mistake, press the [←] button to go back to the [OSD Setup] menu.

Press the [Menu] button to exit the [OSD Setup] menu.



Saving OSD Setup Data

If you change the settings in the [Hot Key Select] or [KB Setup] menus, the confirmation menu shown below appears when you exit the OSD Setup menu:



Select [1: Yes] and press the [Enter] button to save the changes and exit the [OSDSetup] menu.

Select [2: No] and press the [Enter] button or [Menu] button to discard the changes and exit the [OSD Setup] menu.

NOTE: These settings are retained even when the Blade Enclosure is powered off.

Diagnosis by SIGMABLADE Monitor

Diagnostic Process

When the Blade Enclosure is powered on, the diagnostic process of the SIGMABLADE monitor is executed by ITF (Initial Test Firmware).

During diagnosis, the Power LED is green and the Status LED is red.

Test Items

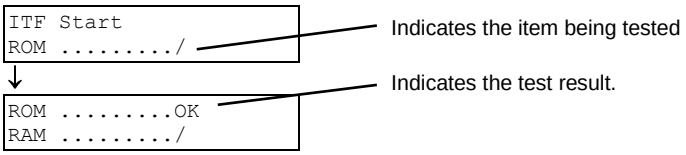
Item	Description
ROM	Tests the internal ROM of the microprocessor of the SIGMABLADE monitor.
RAM	Tests the internal RAM of the microprocessor of the SIGMABLADE monitor.
I2C	Tests the I2C interface used for communication with the EM card.
LCD	Tests the LCD.
Button	Tests button operation.
ADC	Tests the internal A/D converter of the microprocessor of the SIGMABLADE monitor.
OSD	Tests the device for controlling the OSD.
Keyboard	Tests the PS/2 keyboard controller.
Mouse	Tests the PS/2 mouse controller.
USB	Tests the USB controller.

Indication during Diagnosis

The LCD displays the diagnosis results.

During diagnosis, the test item is displayed on the lower line of the LCD. When diagnosis completes, the test item name and test result are displayed on the upper line of the LCD.

[OK] indicates normal operation, [Err] indicates the detection of an error.



Indication of Diagnosis End

When all the tests are completed normally, the result is indicated on the lower line of the LCD for about one second.

```
USB .........OK
ITF Normal End
```

When an error is detected, the result is indicated on the lower line of the LCD for about one second.

```
USB .........OK
ITF Abnormal End
```

When diagnosis completes, the KVM/DVD selection status shown below is displayed until the system status indication appears. During this period, the Status LED of the SIGMABLADE monitor remains red.

```
KVM/DVD Select
KVM: 1   DVD: 1
```

If a fatal error is detected, [HALT] appears on the lower line of the LCD, and the SIGMABLADE monitor stops operating. The following three errors are fatal:

- ROM diagnosis error
- RAM diagnosis error
- I2C diagnosis error

```
ROM .........Err
HALT
```

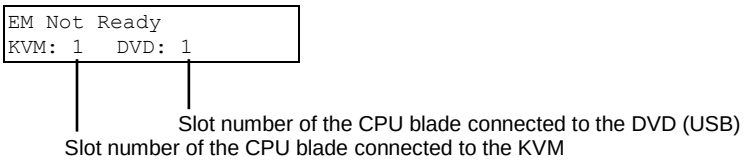
```
RAM .........Err
HALT
```

```
I2C .........Err
HALT
```

IMPORTANT: Some features of the SIGMABLADE monitor are disabled during ITF Abnormal End. All the features of the SIGMABLADE monitor are disabled during HALT. Contact your service representative.

Indication of EM Card Error

When the EM card fails to control the SIGMABLADE monitor, the LCD indication changes as shown below. In this case, only the KVM/DVD selection feature and OSD Setup Menu operations are available. Displaying the system status and operating the main menu are disabled.


EM Not Ready
KVM: 1 DVD: 1
Slot number of the CPU blade connected to the DVD (USB)
Slot number of the CPU blade connected to the KVM

The LED's on the SIGMABLADE monitor are indicated as follows:

- Power LED: Green
- Status LED: Red
- ID LED: Toggled on/off by pressing the ID switch.

Switchover between KVM and DVD

When you press the [Enter] button, the cursor selects the "KVM:" or "DVD:" field.

Press the [↓] or [↑] buttons to select a slot number between 1 and 8, or E (EM). When the number is changed, the selected number and the cursor start blinking. Pressing the [Enter] button switches over the KVM or DVD. The selected number stops blinking when the switchover is complete.

Press the [→] or [←] buttons to select the KVM or DVD. If you press the [→] or [←] buttons while changing the number, the selection returns to the previous number. If no button is pressed for 30 seconds or longer, the selection is canceled without executing switchover.

IMPORTANT: Switching over is available when the EM card is faulty. However, the connection of the KVM or DVD may be disabled by the protection feature. If the selected EM card does not operate normally, recover the EM card before connection.

NOTE: In the [DVD] field, do not select "E" when the EM card is faulty.

Chapter 6

Using OSD (On Screen Display) Feature

The following features are available when using the OSD (On Screen Display) built into the SIGMABLADE monitor firmware. Use a PS/2 keyboard connected to the Blade Enclosure to use this feature.

- Displays the names of the rack, Blade Enclosure, and CPU blades.
  Displays the selected KVM (Keyboard/Video/Mouse), the selected DVD/USB, and status of the CPU blades.
- Allows you to select a CPU blade to connect to the KVM.
- Allows you to select a CPU blade to connect to the DVD-ROM and the front USB port of the Blade Enclosure.
- Allows you to operate switches on the CPU blade.
- Allows you to change the names of the rack, Blade Enclosure, and CPU blades.
- Allows the name of the CPU blade connected to the KVM to be displayed.

The OSD has the following three modes:

- OSD menu mode

  Displays the OSD menu on screen. Various OSD features are executed from the keyboard.

- OSD simple mode

  Displays the name of the CPU blade connected to the KVM. You can change the KVM connection by entering the slot number of an installed CPU blade from the keyboard.

- Server Name Resident mode

  When you set the Server Name Resident mode while in OSD simple mode, the name of the CPU blade connected to the KVM is displayed in the upper left of the screen.

  While in Server Name Resident or Non-resident mode, you can activate the OSD menu mode or OSD simple mode.

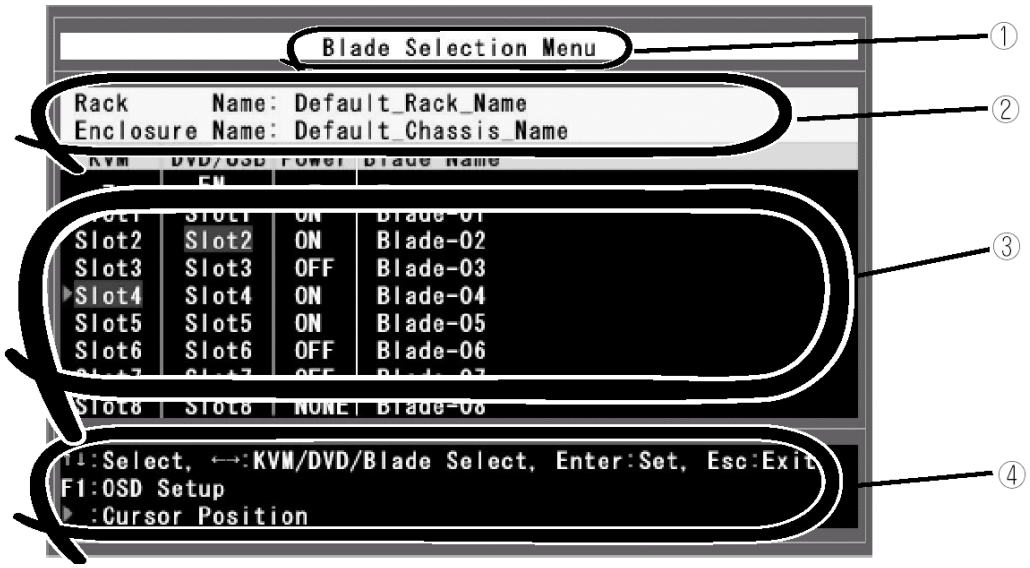
NOTE: Even if the CPU blade connected to the KVM is powered off, the OSD is still available because the Blade Enclosure contains a video signal generator. In this case, the resolution is fixed to 640x480.

IMPORTANT: If the EM card is not connected properly or operating normally, the KVM or DVD/USB cannot be connected to the CPU blade. Check that the EM card is operating normally.

OSD Menu Mode

OSD menu mode is composed of the Main Menu and Control Menus.

When the OSD menu mode is activated, the Main Menu (Blade Selection Menu) appears.



1 Indicates a menu title.
2 Indicates the rack name and Blade Enclosure name.
3 On the main menu, KVM selection, DVD/USB selection, CPU blade statuses, and CPU blade names are displayed. On the control menu, a list of menu items is displayed.
4 Explains key usage and parameters for each control menu.

Activating OSD Menu Mode

Enter the hot key to start the OSD menu mode.

Hot key settings can be changed in the OSD menu mode or on the OSD Setup Menu of the SIGMABLADE monitor.

- Select Hot Key

  The following two hot keys are available to start the OSD menu mode:

  Press the <Scroll Lock> key twice.

  Press the <Ctrl>, <Alt>, and <Shift> keys simultaneously.

- Operation timeout

  If the keyboard is not operated for one minute or longer, the OSD menu mode is canceled.

> **NOTE:** While in the OSD menu mode, the keyboard is used exclusively for operation of the OSD. Accordingly, you cannot use the keyboard for the operating system on the CPU blade. To use the keyboard for the operating system, exit the OSD menu mode. Mouse operation is available while in OSD menu mode.

Operation in OSD Menu Mode

The following five menus are available in the OSD menu mode:

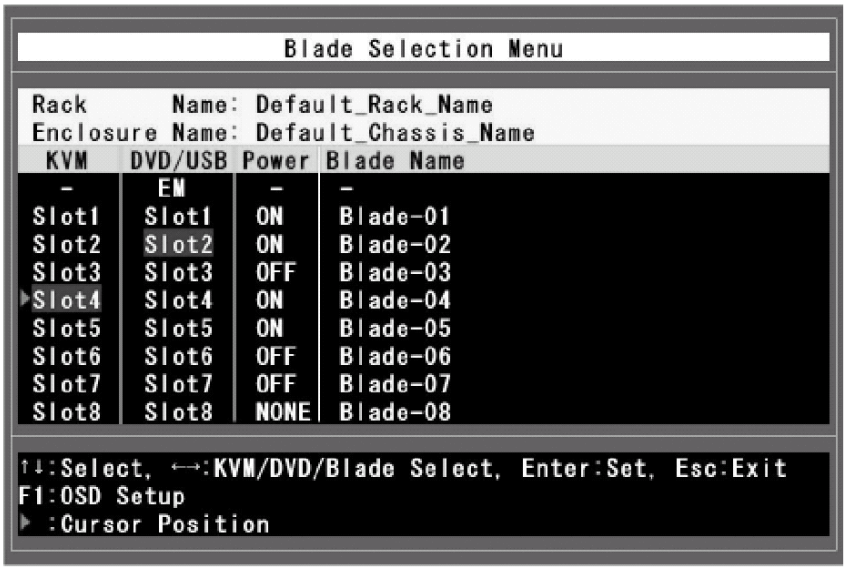
- Blade Selection Menu (main menu)
- Blade Control Menu
- Rack Control Menu
- Enclosure Control Menu
- OSD Setup Menu

Blade Selection Menu (Main Menu)

The Main Menu appears when the OSD menu mode is activated.

You will see the rack name, Blade Enclosure name, selected status of KVM and DVD/USB, power statuses of CPU blades, and CPU blade names on this screen.

You can select the KVM/DVD, and activate each menu item from this menu.



On-screen Display

Item	Description
Rack Name	Indicates the rack name.
Enclosure Name	Indicates the Blade Enclosure name.
KVM	Indicates the KVM selection status. The slot number of the selected CPU blade is indicated with a blue background.
DVD/USB	Indicates the DVD/USB selection status. The slot number of the selected CPU blade or EM card is indicated with a blue background. “EM” represents an EM card.
Power	Indicates the CPU blade status. ON: CPU blade is powered on. OFF: CPU blade is powered off. NONE: CPU blade is not connected. N/A: CPU blade status is unknown.
Blade Name	Indicates the names of the CPU blades.

IMPORTANT:

- The [Rack Name], [Enclosure Name], and [Blade Name] are specified from the EM card. If the EM card is not operating normally, the default values shown below are displayed. In this case, check if the EM card is operating normally.
  Rack Name: Default_Rack_Name
  Enclosure Name: Default_Chassis_Name
  Blade Name: Blade-01 to Blade-08
- When the installed CPU blade occupies two slots (e.g., NEC Express5800/120Bb-m6), the indications for "Blade Name" and "Power" of the slot to the right of the installed slot remain unchanged (default value). In addition, the "Blade Control Menu" described later is unavailable for the right slot.

Key Operation

Key	Function
<↑><↓><←><→> key	Moves the cursor.
<Enter> key	Executes menu operation at the cursor position.
<Esc> key	Exits the OSD menu.
<R> key	Activates [Rack Control Menu].
<E> key	Activates [Enclosure Control Menu].
<F1> key	Activates [OSD Setup Menu].
<K> key	Moves cursor to [Slot1] in KVM selection field.
<D>, <U> key	Moves cursor to [Slot1] in DVD/USB selection field.
<S> key	Moves cursor to [Slot1] in Blade Name field.
<1> to <8> key	Selects [Slot1] to [Slot8] directly.

Operation in Blade Selection Menu

Item	Description
KVM switching	Select one of the slot numbers from [Slot1] to [Slot8] by using the cursor and press the <Enter> key. The KVM is connected to the CPU blade in the selected slot. Or, press one of the keys from <1> to <8> while the cursor is on the KVM selection field. The KVM is connected to the CPU blade in the selected slot. (*1)
DVD/USB switching	Select one of the slot numbers from [Slot1] to [Slot8] by using the cursor and press the <Enter> key. The DVD/USB is connected to the CPU blade or the EM card in the selected slot. Or, press one of the keys from <1> to <8> while the cursor is on the DVD/USB selection field. The DVD/USB is connected to the CPU blade in the selected slot. (*1)
Activating [Blade Control Menu]	Select a Blade Name by using the cursor and press the <Enter> key to display the [Blade Control Menu]. Or, press one of the keys from <1> to <8> while the cursor is on the Blade Name field. The [Blade Control Menu] for the CPU blade in the selected slot is displayed. (*2)
Activating [Rack Control Menu]	Select a Rack Name by using the cursor and press the <Enter> key or <R> key to display the [Rack Control Menu]. (*2)
Activating [Enclosure Control Menu]	Select an Enclosure Name by using the cursor and press the <Enter> key or <R> key to display the [Enclosure Control Menu]. (*2)
Activating [OSD Setup Menu]	Press the <F1> key to display the [OSD Setup Menu].
Exit from OSD menu	Press the <Esc> key to exit the OSD menu mode.

*1: When a blade is selected on the KVM or DVD/USB switching menu, switching is performed regardless of the status of the selected CPU blade. However, if you select the CPU blade slot number currently selected or the EM card, it is ignored.
If a selected CPU blade is powered-off, the OSD menu will be displayed by the video generator built into the Blade Enclosure. The resolution is fixed to 640x480.

*2: You will be prompted to enter the security password before displaying the menu.

KVM Switching

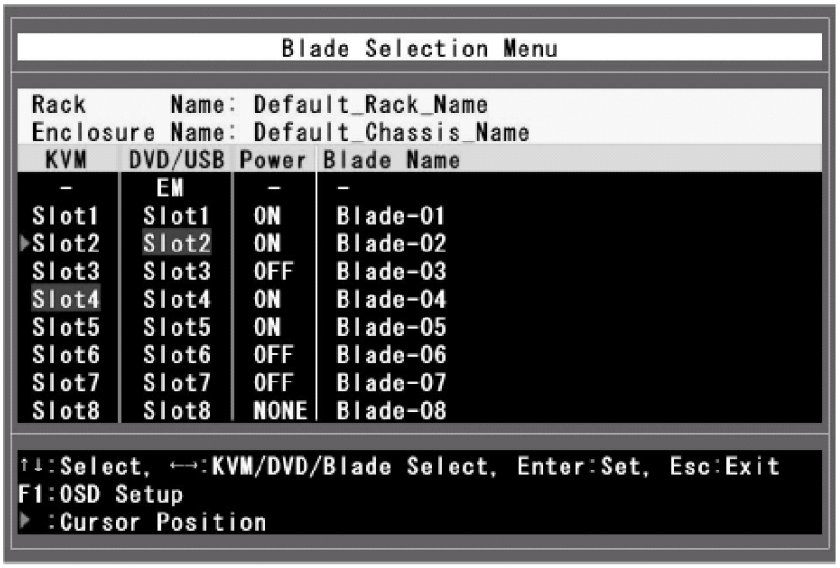
You can change the connection of the KVM on the [Blade Selection Menu].

Select the slot number of a CPU blade to which you want to connect the KVM by using the cursor. When you press the <Enter> key, the KVM is connected to the selected CPU blade.

When the <Enter> key is pressed, the KVM is disconnected and, two seconds later, connected to the selected CPU blade.

During this period, the indication on the window disappears. After the KVM is connected, the [Blade Selection Menu] appears again.

Alternately, you can use one of the keys from <1> to <8> while the cursor is placed on [Slot1] to [Slot8] in the KVM field to select a CPU blade to connect to the KVM.



IMPORTANT:

- If the EM card is not connected correctly or does not operate normally, the protection feature may disable the connection of the KVM. When the KVM is not available for the selected CPU blade, check if the EM card is operating normally.
- Do not connect or disconnect the KVM while the CPU blade is starting up. Otherwise, the CPU blade may fail to start.

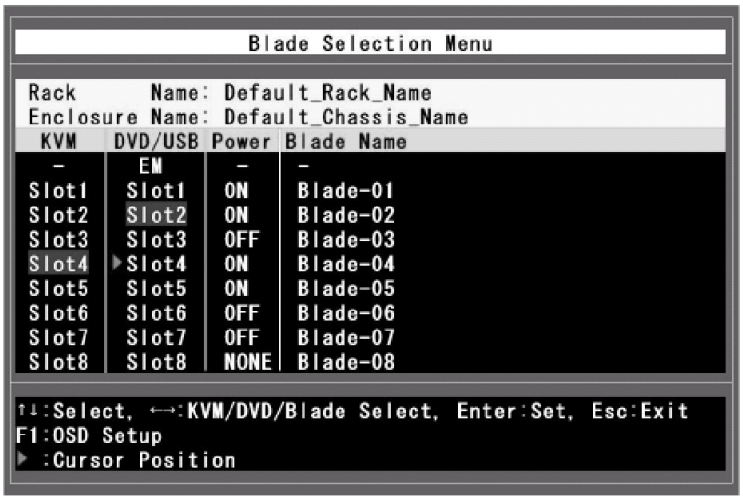
DVD/USB Switching

On the [Blade Selection Menu], you can switch the connection of both the DVD and the front USB port.

Select a CPU blade slot number from [Slot1] to [Slot8] and [EM] in the DVD/USB field and press the <Enter> key. The DVD and the front USB port are connected to the selected CPU blade or EM card.

When the <Enter> key is pressed, the DVD/USB is disconnected and, three seconds later, connected to the selected CPU blade or EM card. Then, the DVD/USB field displays the connected CPU blade or EM card.

Alternately, you can use one of the keys from <1> to <8> while the cursor is placed on [Slot1] to [Slot8] or [EM] in the DVD/USB field to select a CPU blade to connect to the DVD/USB.



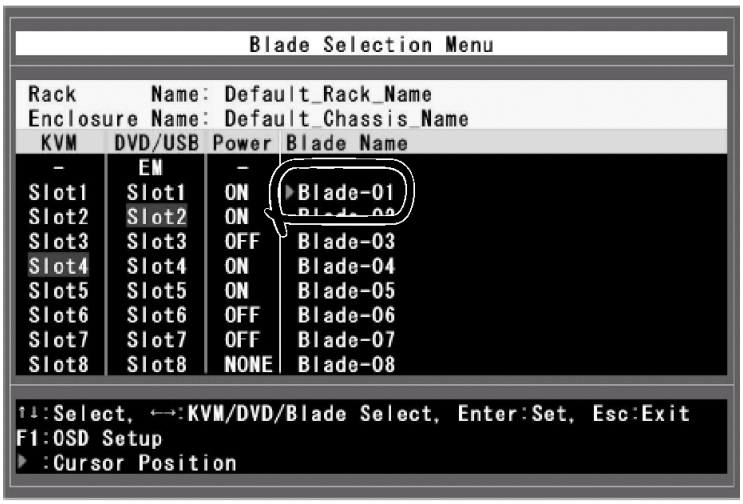
IMPORTANT:

- If the EM card is not connected correctly or does not operate normally, the protection feature may disable the connection of the DVD/USB. When the DVD/USB is not available for the selected CPU blade, check if the EM card is operating normally.
- If you select the DVD/USB while the CPU blade is using DVD/USB devices, a malfunction may occur. Select the DVD/USB after the CPU blade finishes its operations.
- Do not connect or disconnect the DVD/USB while the CPU blade is starting up. Otherwise, the CPU blade may fail to start.

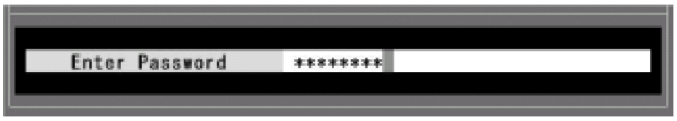
Blade Control Menu

To activate the [Blade Control Menu], use the cursor to select the CPU blade you want to operate from the Blade Name field in the [Blade Selection Menu], and press the <Enter> key.

When activated, the password entry window appears. Enter the password. Then, the [Blade Control Menu] appears.



If the control menu is protected by a password, a password entry window appears.



Use the keyboard to enter the password. If the entered password matches the registered password, the control menu is displayed. If no password is registered, press the <Enter> key with the password entry field blank. The control menu appears. If the entered password does not match the registered password, the screen returns to the [Blade Selection Menu].

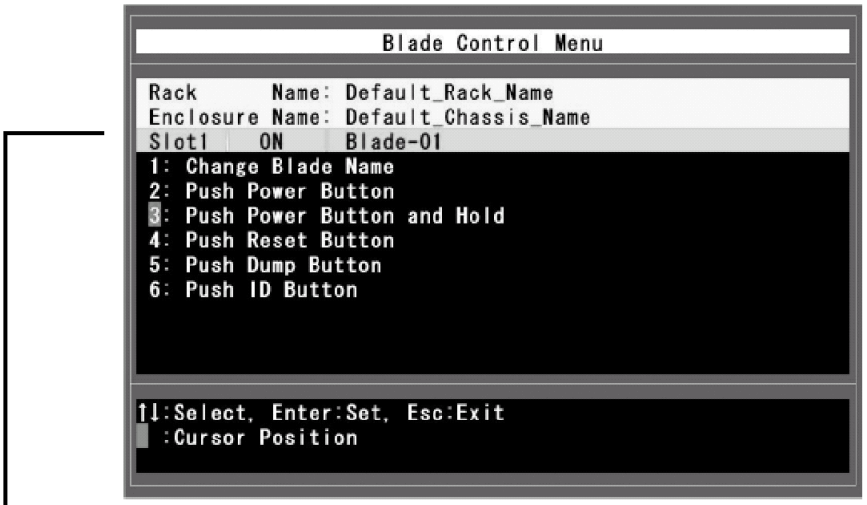
NOTE: No password is registered by default. Set the password according to "Setting OSD password" described later.

If the entered password does not match the registered password, the error message shown below appears.

Press the <Esc> key to go back to the [Blade Selection Menu].

When the [Blade Control Menu] starts, the window shown below appears.

Press the <Esc> key to go back to the [Blade Selection Menu].



Indicates the slot number, status, and name of the selected CPU blade.

IMPORTANT: When the installed CPU blade occupies two slots (e.g., NEC Express5800/120Bb-m6), the Blade Control menu is unavailable for the slot to the right of the installed slot. Use this menu on the left slot.

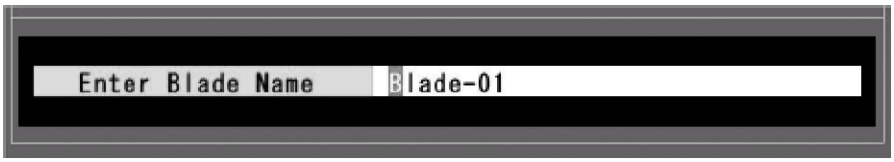
Menu Items

Menu	Function
1: Change Blade Name	Select and press the <Enter> key, or press the <1> key to open the Enter Blade Name window.
2: Push Power Button	Select and press the <Enter> key, or press the <2> key to let the EM card perform an operation equivalent to pressing the POWER switch.
3: Push Power Button and Hold	Select and press the <Enter> key, or press the <3> key to let the EM card perform an operation equivalent to pressing the POWER switch for 4 seconds or longer.
4: Push Reset Button	Select and press the <Enter> key, or press the <4> key to let the EM card perform an operation equivalent to pressing the RESET switch.
5: Push Dump Button	Select and press the <Enter> key, or press the <5> key to let the EM card perform an operation equivalent to pressing the DUMP switch.
6: Push ID Button	Select and press the <Enter> key, or press the <6> key to let the EM card perform an operation equivalent to pressing the ID switch.

*1: The EM card controls execution of menus [2] to [6]. If the EM card is not connected properly or does not operate normally, an error message is displayed.

Change CPU Blade Name

When you select [1: Change Blade Name] in the [Blade Control Menu] and press the <Enter> key, or press the <1> key, the "Enter Blade Name" window shown below appears:



The current CPU blade name is displayed in the window. Enter a new blade name by using the keyboard and press the <Enter> key. If the entered blade name contains any unavailable characters or the field is blank, an error is displayed. If you use the current blade name as is, press the <Esc> key to go back to the [Blade Control Menu].

NOTE: The available characters for the blade name are shown below:
'A' to 'Z', 'a' to 'z', '0' to '9', and '- ' (hyphen)
Up to 32 characters are accepted.
The following keys are used for operation.

Key	Description
<Enter> key	Applies the entry.
<Esc> key	Aborts the entry. The entered characters are discarded and the current name is changed.
<←><→> key	Moves the cursor.
<Insert> key	Switches between "Insert" and "Overwrite" mode. Insert mode: The cursor is displayed in magenta. Overwrite mode: The cursor is displayed in yellow.
<Delete> key	Deletes character at the cursor position.
<Back Space> key	Deletes one character before the cursor and moves cursor.

If the entered blade name contains any unavailable characters, an error as shown below is displayed.

Press the <Esc> key to go back to the [Blade Control Menu].

IMPORTANT: The default value is retained if you attempt to change the CPU blade name for a slot that does not contain a CPU blade, or a slot to the right of one that contains a CPU blade that occupies two slots.

Operating CPU Blade

When you select one of the menus [2] to [6] in the [Blade Control Menu], a request to operate the CPU blade is issued to the EM card.

- [2: Push Power Button]

  Performs an operation equivalent to pressing the POWER switch of the CPU blade.

- [3: Push Power Button and Hold]

  Performs an operation equivalent to pressing the POWER switch of the CPU blade for 4 seconds or longer.

- [4: Push Reset Button]

  Performs an operation equivalent to pressing the RESET switch of the CPU blade.

- [5: Push Dump Button]

  Performs an operation equivalent to pressing the DUMP switch of the CPU blade.

- [6: Push ID Button]

  Performs an operation equivalent to pressing the ID switch of the CPU blade.

When the request for an operation is accepted, an indication as shown below appears.

Press the <Esc> key to go back to the [Blade Control Menu].

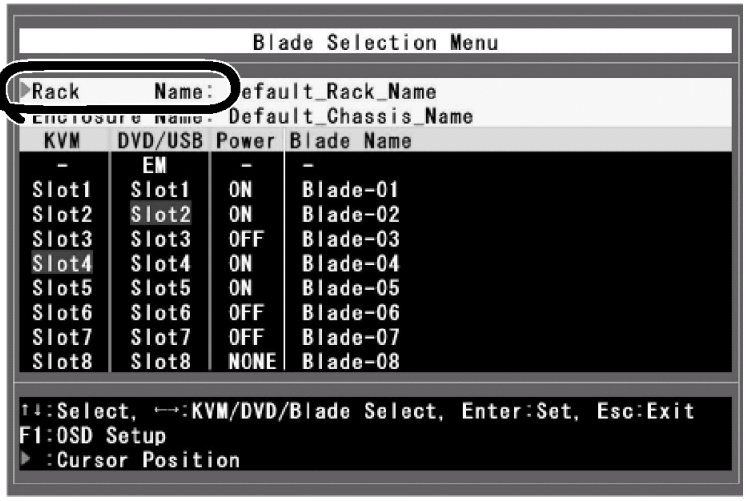
If the request for an operation is rejected, an error message as shown below is displayed.

Press the <Esc> key to go back to the [Blade Control Menu].

IMPORTANT: If the request for an operation is rejected, check if the EM card or the CPU blade is operating normally.

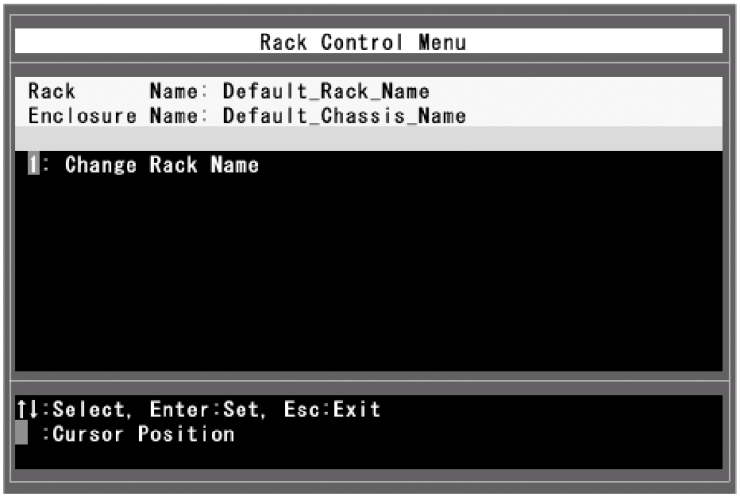
Rack Control Menu

To activate the [Rack Control Menu], use the cursor to select the Rack Name field in the [Blade Selection Menu] and press the <Enter> key, or press the <R> key. When activated, the password entry window appears. Enter the password. Then, the [Rack Control Menu] appears.



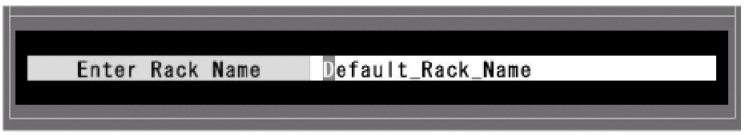
The following window appears when the [Rack Control Menu] is activated.

Press the <Esc> key to go back to the [Blade Selection Menu].



Change Rack Name

When you select [1: Change Rack Name] in the [Rack Control Menu] and press the <Enter> key, or press the <1> key, the "Enter Rack Name" window shown below appears:



The current rack name is displayed in the window. Enter a new rack name by using the keyboard and press the <Enter> key. If the entered rack name contains any unavailable characters, an error is displayed. "null" (no rack name) is acceptable. In this case, delete all the characters in the field and press the <Enter> key. If you use the current rack name as is, press the <Esc> key to go back to the [Rack Control Menu].

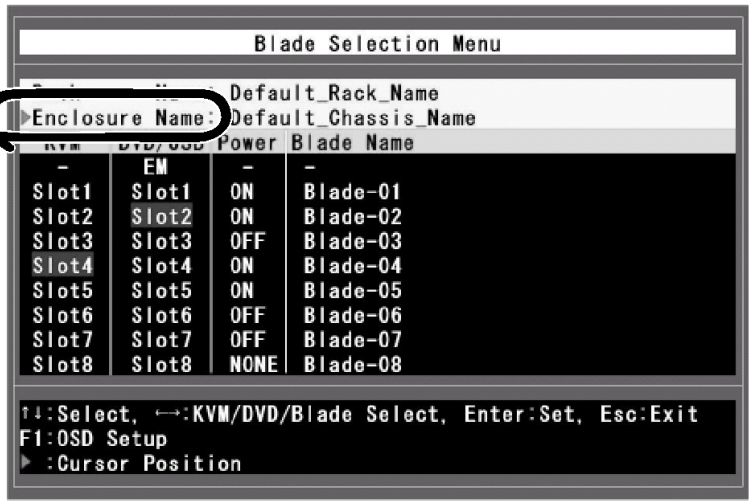
NOTE: The available characters for the rack name are shown below:
'A' to 'Z', 'a' to 'z', '0' to '9', and '- ' (hyphen)
Up to 32 characters are accepted.
See "Change CPU Blade Name" for details of key operation.

If the entered rack name contains any unavailable characters, an error as shown below is displayed.

Press the <Esc> key to go back to the [Rack Control Menu].

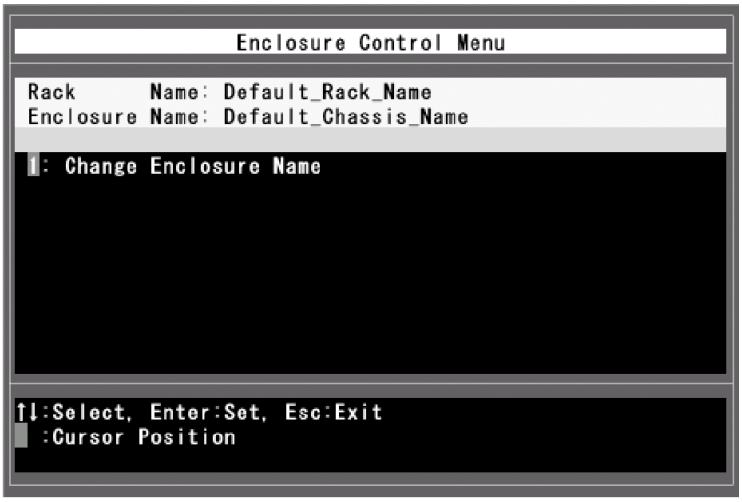
Enclosure Control Menu

To activate the [Enclosure Control Menu], use the cursor to select the Enclosure Name field in the [Blade Selection Menu] and press the <Enter> key, or press the <E> key. When activated, the password entry window appears. Enter the password. Then, the [Enclosure Control Menu] appears.



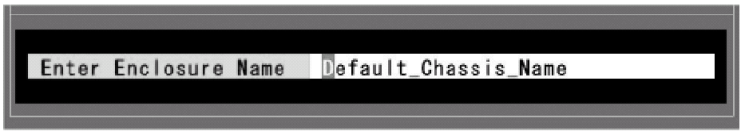
The following window appears when the [Enclosure Control Menu] is activated.

Press the <Esc> key to go back to the [Blade Selection Menu].



Change Blade Enclosure Name

When you select [1: Change Enclosure Name] in the [Enclosure Control Menu] and press the <Enter> key, or press the <1> key, the "Enter Enclosure Name" window shown below appears:



The current enclosure name is displayed in the window. Enter a new enclosure name by using the keyboard and press the <Enter> key. If the entered enclosure name contains any unavailable characters or the field is blank, an error is displayed. If you use the current enclosure name as is, press the <Esc> key to go back to the [Enclosure Control Menu].

NOTE: The available characters for the enclosure name are shown below:
'A' to 'Z', 'a' to 'z', '0' to '9', and '- ' (hyphen)
Up to 32 characters are accepted.
See "Change CPU Blade Name" for details of key operation.

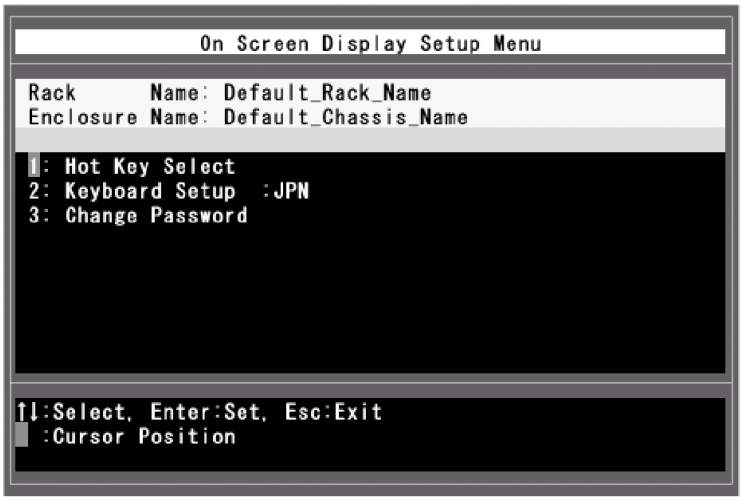
If the entered enclosure name contains any unavailable characters, an error as shown below is displayed.

Press the <Esc> key to go back to the [Enclosure Control Menu].

On Screen Display (OSD) Setup Menu

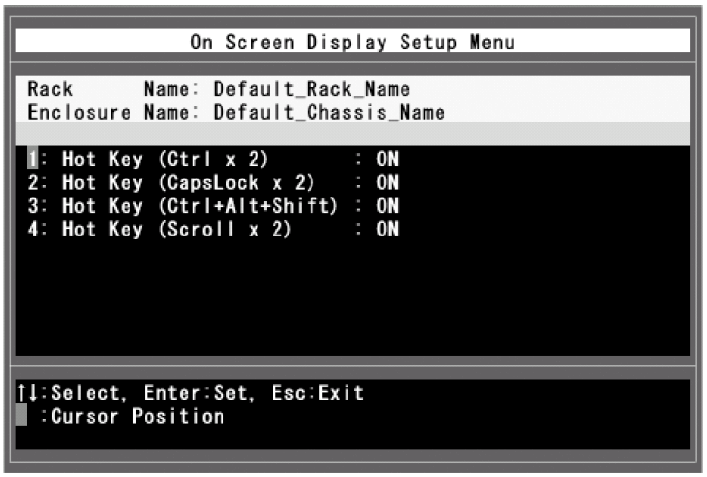
When you press the <F1> key on the [Blade Selection Menu], the [OSD Setup Menu] is activated as shown below.

Press the <Esc> key to go back to the [Blade Selection Menu].



Setting OSD Hot Key

When you select [1:Hot Key Select] on the [OSD Setup Menu] and press the <Enter> key, or press the <1> key, the [Hot Key Select] menu shown below appears:


On Screen Display Setup Menu
Rack Name: Default_Rack_Name
Enclosure Name: Default_Chassis_Name
1: Hot Key (Ctrl x 2) : ON
2: Hot Key (CapsLock x 2) : ON
3: Hot Key (Ctrl+Alt+Shift) : ON
4: Hot Key (Scroll x 2) : ON
↑↓:Select, Enter:Set, Esc:Exit
:Cursor Position

Select a menu number and press the <Enter> key, or press the <1>, <2>, <3>, or <4> key to enable (ON) or disable (OFF) the hot key. Press the <Esc> key to go back to the [OSD Setup Menu].

Item	Description
1: Hot Key (Ctrl x 2)	Pess the <Ctrl> key twice. Pressing this hot key activates the OSD simple mode.
2: Hot Key (CapsLock x 2)	Press the <Caps Lock> key twice. Pressing this hot key activates the OSD simple mode.
3: Hot Key (Ctrl+Alt+Shift)	Press the <Ctrl>, <Alt>, and <Shift> keys simultaneously. Pressing this hot key activates the OSD menu mode.
4: Hot Key (Scroll x 2)	Press the <Scroll Lock> key twice. Pressing this hot key activates the OSD menu mode.

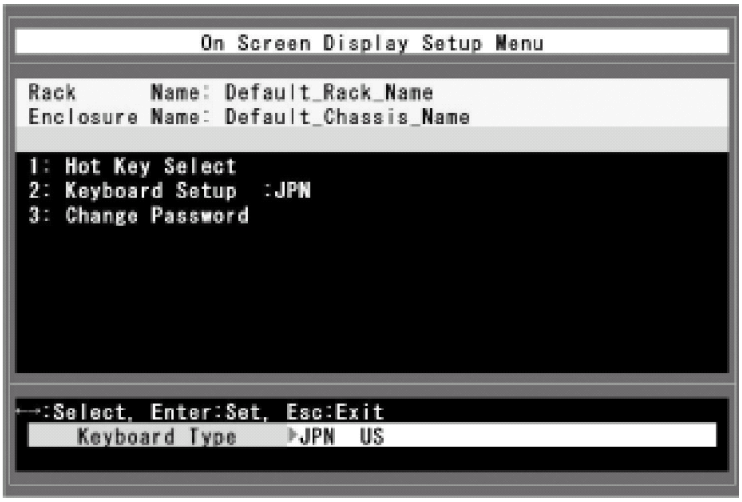
NOTE: All hot keys are enabled (ON) by default. When the optional server switch unit is connected and you want to use a hot key, set the hot keys so that they do not conflict with other hot keys.
If a hot key is also used in an application program, select a different hot key to avoid a conflict.

IMPORTANT: If you change the settings in the [Hot Key Select] menu, a confirmation menu asking you whether to save the changes or not appears when you exit the OSD Setup menu. If you select [No (does not save)], the changes are discarded.

Set Keyboard Type

When you select [2:Keyboard Setup] in the [OSD Setup Menu] and press the <Enter> key, or press

the <2> key, the "Set Keyboard Type" window shown below appears:



Use the <←> or <→> keys to move the cursor and press the <Enter> key to select the keyboard type. Press the <Esc> key to close the window without changing the keyboard type.

The following two keyboard types are available:

JPN: Japanese keyboard

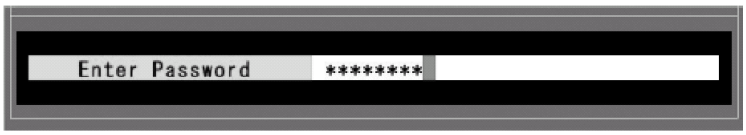
US: English keyboard

NOTE: The default is "JPN."

IMPORTANT: If you change the settings in the [Set Keyboard Type] menu, a confirmation menu asking you whether to save the changes or not appears when you exit the OSD Setup menu. If you select [No (does not save)], the changes are discarded.

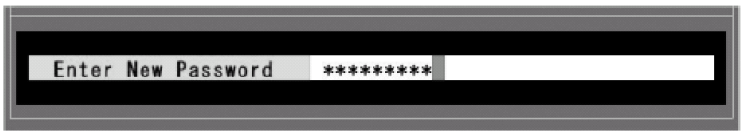
Set OSD Password

When you select [3:Change Password] in the [OSD Setup Menu] and press the <Enter> key, or press the <3> key, the "Enter Password" window as shown below appears:



Enter the current password and press the <Enter> key. If the entered password is correct, the window goes to the Enter New Password window.

Press the <Esc> key to go back to the [OSD Setup Menu].

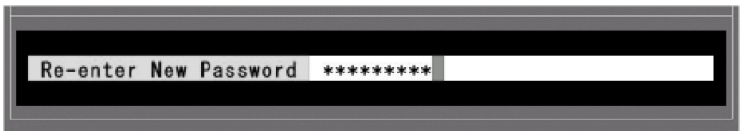


Enter a new password and press the <Enter> key. If the entered password is accepted, the window goes to the Re-enter New Password window. Press the <Esc> key to go back to the [OSD Setup Menu].

NOTE: The available characters for the password are shown below:

'A' to 'Z', 'a' to 'z', '0' to '9', and '- ' (hyphen).

Up to 15 characters are accepted.



Enter the new password again and press the <Enter> key. If the entered password is correct, the password is changed.

If the entered password is not correct or any unavailable characters are used in the password, an error as shown below is displayed. Press the <Esc> key to go back to the [Enter Password] window.

If the confirmation password does not match the new password, an error as shown below appears. Press the <Esc> key to go back to the [OSD Setup Menu].

IMPORTANT: If you change the password, a confirmation menu asking you whether to save the changes or not appears when you exit the OSD Setup menu. If you select [No (does not save)], the changes are discarded and the password is unchanged. If you forget the password, clear the setup information.
For more information, see section [3. Using Command Line Console Feature] → [Command Reference] → [updateopc -c]

Save OSD Setup

If you change the setup data, a confirmation menu asking you whether to save the changes or not appears when you exit the OSD Setup menu. Press the <Y> key to save the changes. Press the <N> or <Esc> key to discard the changes. The settings are retained even when the Blade Enclosure is powered off.

OSD Simple Mode

In OSD simple mode, the name of the CPU blade connected to the KVM is displayed in the upper left of the screen. You can change the KVM connection by using the keyboard.

Activating OSD Simple Mode

Enter the hot key to start the OSD simple mode.

Hot key settings can be changed in the OSD menu mode or on the OSD Setup Menu of the SIGMABLADE monitor.

- Select Hot Key

  The following two hot keys are available to start the OSD simple mode:

  Press the <Ctrl> key twice.

  Press the <CapsLock> key twice.

- Operation timeout

  If the keyboard is not operated for one minute or longer, the OSD simple mode is canceled.

> **NOTE:** While in the OSD simple mode, the keyboard is used exclusively for operation of the OSD. Accordingly, you cannot use the keyboard for the operating system on the CPU blade. To use the keyboard for the operating system, exit the OSD simple mode. Mouse operation is available while in the OSD simple mode.

Operation in OSD Simple Mode

In the OSD simple mode, you can switch over the KVM and set the Server Name Resident mode.

When the OSD simple mode is activated, the name of the CPU blade connected to the KVM is displayed in the upper left of the screen.

Background color: Magenta

Character color: White

Press the <Esc> key to exit the simple mode without changing the KVM connection.

KVM Switchover

Press the keys <1> to <8> to specify the slot number to connect to the KVM. When the switchover is complete, the background color is changed to blue. Then, the OSD simple mode is canceled after about three seconds.

When the Server Name Resident mode is enabled, the OSD display is subject to the Server Name Resident mode. If you select the CPU blade slot number that is currently selected, it is ignored. Pressing the <Esc> key cancels the OSD simple mode without changing the KVM connection.

Changing Server Name Resident Mode

Pressing the <A> or <D> key toggles on/off (enable/disable) the Server Name Resident mode. When the mode is changed, the OSD simple mode is canceled. If the Server Name Resident mode is set to on, the mode is changed to the Server Name Resident mode after the OSD simple mode is canceled. If the Server Name Resident mode is set to off, the OSD display is terminated after the OSD simple mode is canceled. Pressing the <Esc> key cancels the OSD simple mode without changing the mode.

Server Name Resident Mode

In the Server Name Resident mode, the name of the CPU blade connected to the KVM is displayed in the upper left of the screen.

Background color: Blue

Character color: White

While in the Server Name Resident mode, you can activate the OSD menu mode or OSD simple mode by entering the hot key.

Activating Server Name Resident Mode

See "Changing Server Name Resident Mode" described earlier. If the Server Name Resident mode is set to on, the mode is changed to the Server Name Resident mode after the OSD simple mode is canceled. To cancel the Server Name Resident mode, activate the OSD simple mode and set the Server Name Resident mode to off.

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Chapter 7

Troubleshooting

This section describes the corrective actions to take when system problems are encountered.

LED Indication

If an error occurs in the EM card, the STATUS LED on the EM card and the SIGMABLADE monitor indicates the error. See the sections [1. Names and Functions of Components] and [5. SIGMABLADE monitor] for more information.

Error Message on SIGMABLADE Monitor

If an error occurs in the EM card or the Blade Enclosure, an error message appears on the SIGMABLADE monitor.

For error messages during diagnosis at power-on, see [Diagnosing by SIGMABLADE Monitor]. For other error messages, see the table below:

Error message	Meaning	Action
FANn EFuse Alm	Fan unit n (n=1-5) EFuse alarm occurred.	Replace the relevant fan unit.
EMn Fail Alm	EM card n (n=1-2) failure occurred.	Replace the relevant EM card.
EMn +3.3Vs Alm xx	EM card n (n=1-2) +3.3Vs voltage alarm occurred.	Replace the relevant EM card.
EMn +VBAT Alm xx	EM card n (n=1-2) +VBAT voltage alarm occurred.	Replace the relevant EM card.
EMn +5.0Vs Alm xx	EM card n (n=1-2) +5.0Vs voltage alarm occurred.	Replace the relevant EM card.
EMn +2.5Vs Alm xx	EM card n (n=1-2) +2.5Vs voltage alarm occurred.	Replace the relevant EM card.
EMn +1.2Vs Alm xx	EM card n (n=1-2) +1.2Vs voltage alarm occurred.	Replace the relevant EM card.
IP +12V Alm xx	InterPoser +12V voltage alarm occurred.	Contact your service representative.
IP +5.0V Alm xx	InterPoser +5.0V voltage alarm occurred.	Contact your service representative.
IP +3.3V Alm xx	InterPoser +3.3V voltage alarm occurred.	Contact your service representative.
IP +5.0Vs Alm xx	InterPoser +5.0Vs voltage alarm occurred.	Contact your service representative.
IP +3.3Vs Alm xx	InterPoser +3.3Vs voltage alarm occurred.	Contact your service representative.
CB +12V Alm xx	Connector board +12V voltage alarm occurred.	Contact your service representative.

Error message	Meaning	Action
CB +5.0V Alm xx	Connector board +5.0V voltage alarm occurred.	Contact your service representative.
CB +3.3V Alm xx	Connector board +3.3V voltage alarm occurred.	Contact your service representative.
FANn +12V Alm xx	Fan unit n (n=1-5) voltage alarm occurred.	Replace the relevant fan unit.
EMn Temp Alm xx	EM card n (n=1-2) temperature alarm occurred.	Replace the relevant EM card.
CB Temp Alm xx	Connector board temperature alarm occurred.	Contact your service representative.
MP-R Temp Alm xx	Mid Plane temperature alarm occurred.	Contact your service representative.
MP-L Temp Alm xx	Mid Plane temperature alarm occurred.	Contact your service representative.
SWMn Temp Alm xx	Switch module n (n=1-6) temperature alarm occurred.	Replace the relevant switch module.
FANn Curr Alm xx	Fan unit n (n=1-5) current alarm occurred.	Replace the relevant fan unit.
PSUn AC lost Alm	Power unit n (n=1-4) AC input not detected.	1. Check the AC cable connection. 2. Replace the relevant power unit.
PSUn Fail Alm	Power unit n (n=1-4) failure occurred.	Replace the relevant power unit.
PSUn Predict Alm	Power unit n (n=1-4) failure occurred.	Replace the relevant power unit.
FANn(F) RPM Alm	Fan unit n (n=1-5) revolution alarm occurred.	Replace the relevant fan unit.
FANn(R) RPM Alm	Fan unit n (n=1-5) revolution alarm occurred.	Replace the relevant fan unit.
PWR RdnLost Alm	Power unit is operating in non-redundant mode.	1. Replace the failed power unit. 2. Add another power unit.
PWR RdnDgrd Alm	Power unit is being degraded.	Replace the failed power unit.
PWR Insuffi Alm	Power capacity is insufficient.	Add another power unit.
FAN RdnLost Alm	Fan unit is operating in non-redundant mode.	1. Replace the failed fan unit. 2. Add another fan unit.
FAN RdnDgrd Alm	Fan unit is being degraded.	Replace the failed fan unit.
FAN insuff Alm	Number of fans is insufficient.	Add another fan unit.
EM RdnLost Alm	EM card is operating in non-redundant mode.	1. Replace the failed EM card. 2. Add another EM card.
SWMn IFmiss Alm	Switch module n (n=1-6) interface mismatch	1. Check the connection between the relevant switch module and the CPU blades. 2. Replace the relevant switch module or the CPU blades.

Collecting Error Logs

This section describes how to collect error logs.

Overview

When an error occurs in the EM card, you may be requested to collect the error logs according to the procedure described below. The error logs are used for troubleshooting.

Collection using Web Console

1. Log in to the Web console of the EM card with the user account "admin."
2. Click [Log] on the menu bar, and go to the menu to collect the EM card log.
3. Click the [Run] button.
4. Specify the location to store the log file and its file name.
5. When the location and file name are specified, the log collection starts.

   Log collection completes when the log file is saved in the specified location with the specified file name.

NOTE: The default file name is "collectem-XXX_XXX_XXX_XXX-YYMMDD-HHMMSS.tgz".

XXX_XXX_XXX_XXX: IP address of the EM card.

YYMMDD-HHMMSS: Creation date of the log file

Collection using SIGMABLADE Monitor

1. Insert a USB memory device in the USB port at the front of the Blade Enclosure.
2. Select [1: KVM/DVD Sel] on the main menu of the SIGMABLADE monitor.
3. Select "E" in the [DVD] field on the KVM/DVD Select menu, and click the [Enter] button.
4. The screen returns to the main menu of the SIGMABLADE monitor. Select [6: Collect LOG].
5. On the log collect submenu, select [1: EM]. The collection of the EM log starts.
6. During collection, "Collecting LOG" is displayed.

   Upon completion of EM log collection, the result is displayed.

   "OK" indicates the completion of log collection.

NOTE: The collected EM log file is stored in the top directory (folder) of the USB memory device with the file name "collectem-XXX_XXX_XXX_XXX-YYMMDD-HHMMSS.tgz".

XXX_XXX_XXX_XXX: IP address of active EM card

YYMMDD-HHMMSS: Creation date of the log file

Collection using Command Line Console

1. Log in to the Command Line Console with the user account "admin."
2. Run the "/sbin/collect" command.
3. Make sure that the file "/logcollect/collect.tgz" is created.

   Log out of the Command Line Console.
4. Log in via ftp and download the "/logcollect/collect.tgz" file.

   The user account is "admin."

Collection using NEC ESMPRO Manager

1. Start NEC ESMPRO Manager.
2. Right-click on the EM card tree, and select [Collect EM card log] from the pull-down menu.
3. In the [Browse] dialog box, specify the folder to save the log file.

   A DOS prompt appears and the EM log collection command starts automatically. Wait until the process completes.
4. Make sure that the log file is created in the specified folder.

Others

The backlight of SIGMABLADE monitor does not light.

→ The backlight of the SIGMABLADE monitor is automatically turned off if no buttons are pressed for 1 minute or longer (default). To change the timer settings, see section [3. Using Command Line Console Feature] → [Configuration File] → [SIGMABLADE Monitor] → [CFG_EXPRESS_LCD_BACKLIGHT_OFF_TIMER] and set the timer appropriately.

The keyboard or mouse does not work correctly.

- ❑ Has the OSD menu been activated?

  → While the OSD menu is running, keyboard operation is disabled. Use the mouse instead or press the <Esc> key to exit the OSD menu.

- ❑ Are the keyboard and mouse connected properly to the Blade Enclosure?

  → Check if they are properly connected.

- ❑ Are the keyboard and mouse connected to the CPU blade configured correctly?

  → Check if they are configured correctly on the CPU blade. Refer to the User's Guide of the CPU blade.

- ❑ Are the keyboard and mouse applicable to the NEC Express server?

  → Use a keyboard and mouse applicable to the NEC Express server.

- ❑ Does the EM card operate normally?

  → Check the Status LED on the SIGMABLADE monitor. If the EM card is not connected properly or operating normally, the KVM cannot be connected.

- ❑ When the "Legacy USB Support" feature (to make USB devices available in operating systems that do not support them) is enabled, key entry may be suppressed if the mouse is operated at the same time. Do not use the mouse while performing key entry

  – When installing an operating system in manual mode

  – When using ROM-DOS

  – When using NEC EXPRESSBUILDER

  – When accessing the system BIOS

The screen is sheared or not displayed when switching the KVM:

- ❑ Is the resolution correct?

  → Check the resolution settings of the display unit or the CPU blade. Refer to the User's Guide of the CPU blade or the display unit for more information.

- ❑ Is the synchronization normal?

  → Check the synchronization of the display unit. Refer to the User's Guide provided with the display unit.

- ❑ Is the display unit applicable to the NEC Express server?

  → Use a display unit applicable to the NEC Express server.

- ❑ Is the KVM connected to the CPU blade you wish to use?

  → Check if the KVM is connected to the correct CPU blade by using the SIGMABLADE monitor or OSD menu.

- ❑ Is the power of the CPU blade connected to the KVM on?

  → Power on the CPU blade.

Pressing the hot key does not activate the OSD menu mode or OSD simple mode:

- ❑ Is the hot key disabled?

  → Enable the hot key by using the OSD Setup feature of the SIGMABLADE monitor.

- ❑ Is the keyboard connected to the Blade Enclosure?

  → Check the connection.

KVM cannot be switched over in OSD simple mode:

- ❑ Did you press the correct key?

  → Press one of the keys between <1> and <8>.

  → When using a numeric keyboard, enable (turn on) the Num Lock feature, then press one of the keys between <1> and <8>.

Cannot enter the desired character from the keyboard:

- ❑ Is the correct keyboard selected?

  → Select the correct keyboard in the OSD menu mode or OSD Setup menu of the SIGMABLADE monitor.

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